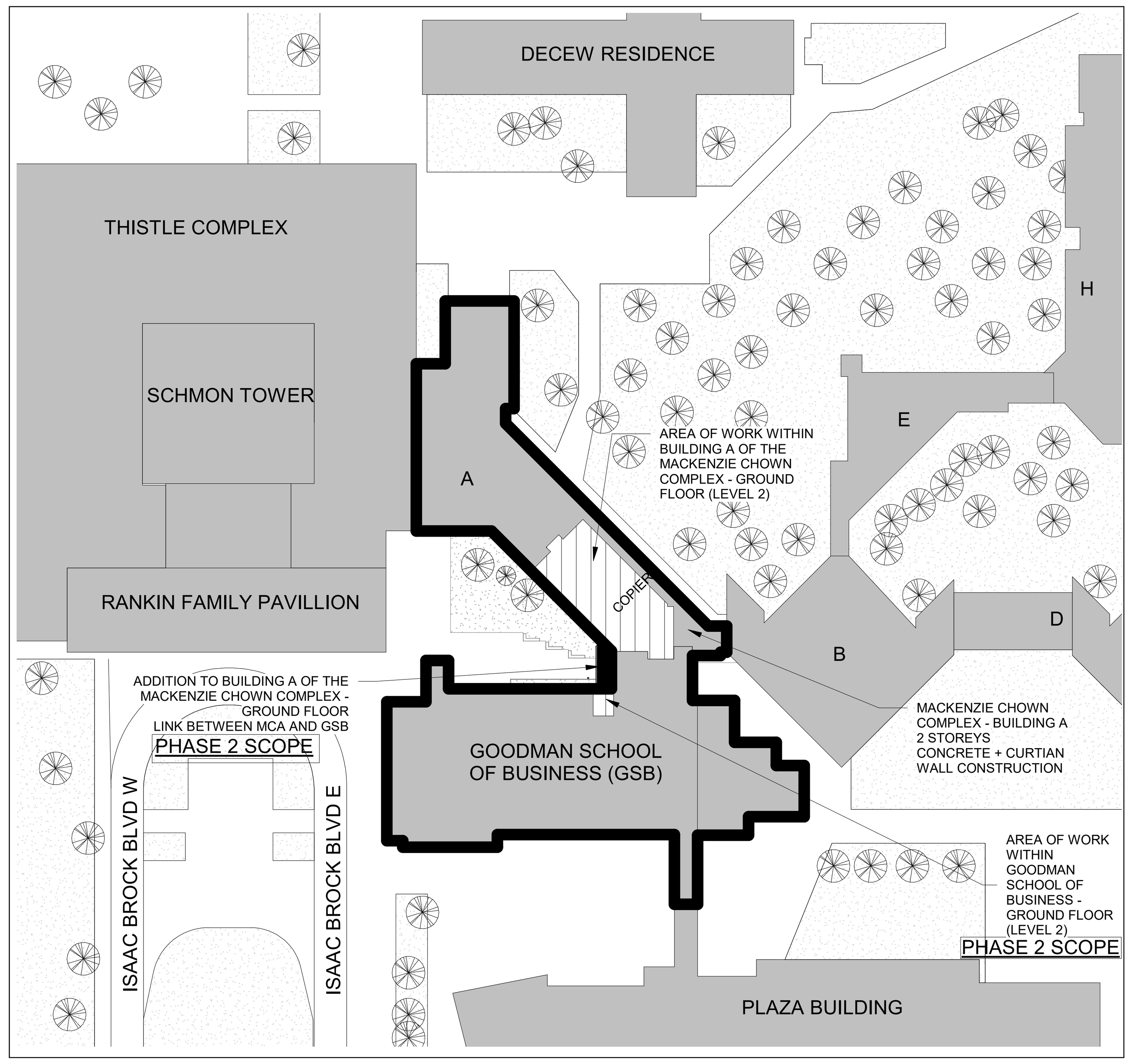
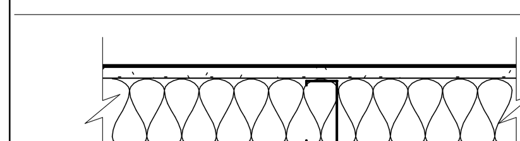


SITE PLAN 9 A001
1 : 1000

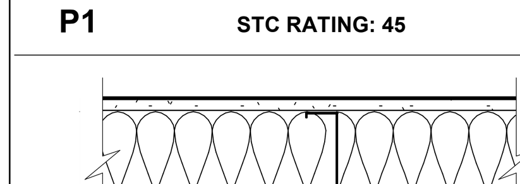
INTERIOR PARTITIONS



P1 - 92mm METAL STUD

- 16mm GWB
- 92mm METAL STUD @ 405 O.C.
- 92mm ACOUSTIC INSULATION
- 16mm GWB

P1 **STC RATING: 45**



P3 - 152mm METAL STUD

- 16mm GWB
- 152mm METAL STUD @ 405 O.C.
- 150mm ACOUSTIC INSULATION
- 16mm GWB

P3

F1 - 64mm METAL STUD

- 16mm GWB
- 64mm METAL STUD @ 405 O.C.

F1

F2 = 92mm METAL STUD

- 16mm GWB
- 152mm METAL STUD @ 405 O.C.

F2

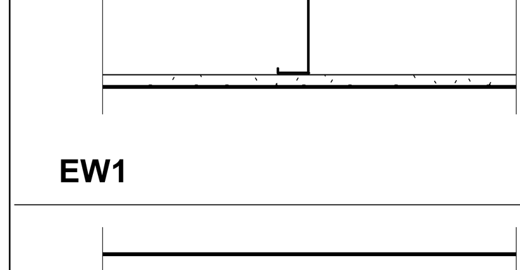
EXTERIOR WALLS

EW1 - TYPICAL EXTERIOR WALL - METAL PANEL

- 57mm ACM PANEL
- 25mm AIR SPACE
- 102mm SPRAYFOAM INSULATION OVER AND AROUND
- 127mm THERMAL MTL CLIP SYSTEM
- 16mm EXT. GRADE GYPSUM SHEATHING/EXT GRADE PLYWOOD
- 152mm METAL STUD @ 405 O.C.
- 16mm GWB

R VALUE REQUIRED: R25
R VALUE PROVIDED: R25

EW1

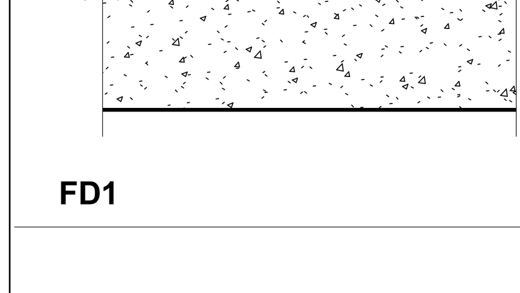


SIMILAR to EW1

- 25mm ACM PANEL
- 25mm AIR SPACE
- 102mm THERMAIL MTL CLIP SYSTEM FILLED WITH (102mm) SPRAY FOAM INSULATION
- EX WALL (MASONARY)

EW2

FOUNDATION WALLS



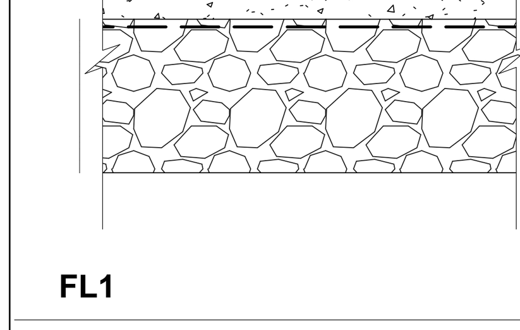
FD1 - TYPICAL FOUNDATION WALL

- DRAINAGE/PROECTION BOARD
- 75mm RIGID TYPE 4 ONSULATION TO DEPTH INDICATED (WHERE FOUNDATION WALL IS EXPOSED ABOVE GRADE, OUTER LAYER OF 25mm RIGID INSULATION TO BE CONCRETE FACED TO 300mm MIN BELOW GRADE).
- FOUNDATION DAMP PROOFING
- CAST-IN-PLACE CONCRETE WALL (REFER TO STRUCTURAL DRAWINGS)

R VALUE REQUIRED: R15.0
R VALUE PROVIDED: R15.0

FD1

FLOORS

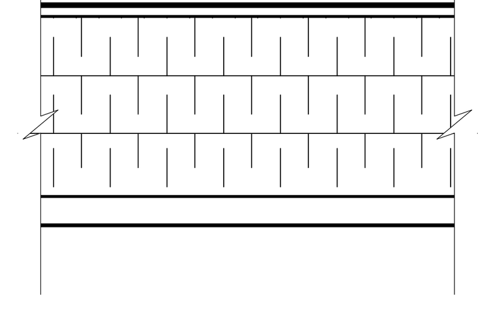


FL1 -SLAB ON GRADE

- FLOOR FINISH (SEE SCHEDULE)
- CONCRETE SLAB ON GRADE
- VAPOUR BARRIER
- 203mm GRANULAR FILL

FL1

ROOF



R1 - ROOF WITH SLOPED INSULATION

- 3-PLY ROOFING MEMBRANE
- COLD PLY ADHESIVE
- 13mm COVERBOARD/ROOF PROTECTION BOARD
- TAPERED POLYISOCYANURATE INSULATION, WHERE REQ'D
- 150mm POLYISOCYANURATE INSULATION IN 2 LAYERS (75 EA.)
- AIR-VAPOUR BARRIER
- 13mm ROOF BOARD
- METAL DECK

R VALUE REQUIRED: R17ci (SEMI-HEATED)
R VALUE PROVIDED: R33.4

R1

ASSEMBLIES 4 A001
1 : 10

SHEET LIST

NO.	NAME
A001	GENERAL NOTES, ASSEMBLIES & SITE PLAN
A002	DEMOLITION PLAN, NOTES, SCHEDULES
A201	LEVEL 2 - FLOOR PLAN AND REFLECTED CEILING PLAN
A400	ELEVATIONS & SECTIONS
A500	SECTION DETAILS
A501	PLAN DETAILS
A700	MILLWORK PLANS AND INTERIOR ELEVATIONS
A800	FLOOR FINISH PLAN & INTERIOR ELEVATIONS

CIVIL

NO.	NAME
CIVIL	
C2.1	SITE GRADING & ESC PLAN
C2.2	SITE DETAILS PLAN

STRUCTURAL

NO.	NAME
S101	STRUCTURAL DATA
S102	STANDARD DETAILS
S103	STANDARD DETAILS
S104	STANDARD DETAILS
S201	LEVEL 2 FOUNDATION PLAN
S202	LEVEL 3 FRAMING PLAN
S301	SECTIONS
S401	SCHEDULES

MECHANICAL

NO.	NAME
M001	GENERAL NOTES & DRAWING LIST
M002	MECHANICAL LEGEND & ABBREVIATIONS
M100	LEVEL 2 PLUMBING, DRAINAGE & FIRE PROTECTION - DEMOLITION
M101	LEVEL 2 PLUMBING, DRAINAGE & FIRE PROTECTION - NEW
M200	LEVEL 2 HVAC - DEMOLITION
M201	LEVEL 2 HVAC - NEW
M300	MECHANICAL DETAILS, SCHEDULES & CONTROL DIAGRAMS

ELECTRICAL

NO.	NAME
E000	GENERAL NOTES, LEGENDS, DRAWING LIST AND SCHEDULES
E050	SPECIFICATIONS
E200	LEVEL 2 LIGHTING
E300	LEVEL 2 POWER & SYSTEMS PLAN
E500	PANEL SCHEDULES
E501	PANEL SCHEDULES & SINGLE LINE DIAGRAM
E600	ELECTRICAL DETAILS
ED300	LEVEL 2 POWER & SYSTEMS DEMOLION PLAN

Item	Data Matrix - 2012 Ontario Building Code : Part 3 & 11	OBC Reference References are to Division B unless noted [A] for Division A or [C] for Division C.
1.	Project Description: ☐ New ■ Addition ■ Alteration ☐ Change of Use Age (years) N/A Additions ■ Yes ☐ No Age (years) N/A Will Be Affected ☐ Yes ■ No	1.1.2.[A] 1.1.1 1.1.1 & 1.3.2.
2.	Major Occupancy(s) Area of Work Existing ASSEMBLY (A2) Proposed ASSEMBLY (A2) Adjacency Existing ASSEMBLY (A2) Other Existing N/A (Located elsewhere in building) Construction Index Existing N/A Proposed N/A Hazard Index Existing N/A Proposed N/A ☐ Not Applicable (no change in major occupancy)	3.1.2.1.(1) T 11.2.1.1.A T 11.2.1.1.B-N
3.	Alteration to Existing Building is ■ Basic Renovation ☐ Extensive Renovation	11.3.3.1 11.3.3.2
4.	Reduction in Performance Level Structural: ☐ Yes ■ No By Increase in Occupant Load: ☐ Yes ■ No By Change in Major Occupancy: ☐ Yes ■ No Plumbing: ☐ Yes ■ No Sewage System: ☐ Yes ■ No	11.4.2.1 11.4.2.2 11.4.2.3 11.4.2.4 11.4.2.5
5.	Compensating Construction N/A ☐ Yes ■ No N/A	11.4.3
6.	Compliance Alternatives Proposed ☐ Yes ■ No N/A	11.5.1
7.	Alternative Measures Proposed ☐ Yes ■ No N/A	
8.	Building Area (m^2) Existing 16319 New 33.3 Area of Work 457.0	1.4.1.2 [A]
9.	Gross Floor Area (m^2) Existing 43741 New 33.3 Area of Work 457.0	1.4.1.2 [A]
10.	Number of Storeys Above grade 3 Area of Work GROUND FLOOR Below grade 1 Height (m) 15.6	1.4.1.2 [A] & 3.2.1.1
11.	Number of Streets/Fire Fighter Access EXISTING	3.2.2.10 & 3.2.5
12.	Building Classification GROUP A, DIVISION 2	3.2.2.24
13.	Sprinkler System Proposed ☐ entire building ☐ selected compartments ■ Selected floor areas ADDITION ONLY ☐ basement ☐ in lieu of roof rating ☐ not required	3.2.2.20-83
14.	Standpipe Required ■ Yes ☐ No EXISTING ONLY	3.2.9
15.	Fire Alarm Required ■ Yes ☐ No	3.2.4
16.	Water Service/Supply is Adequate ■ Yes ☐ No	3.2.5.7
17.	High Building ☐ Yes ■ No	3.2.6
18.	Permitted Construction ☐ Combustible ■ Non Combustible ☐ Both Proposed Construction ☐ Combustible ■ Non Combustible ☐ Both	3.2.2.20-83
19.	Mezzanine(s) Area (m^2) Existing N/A New N/A Area of Work N/A	3.2.1.1.(3)
20.	Occupant Load Based on ■ m^2/person ☐ Design of building Occupancy OFFICES Area (m^2) 457.0 Rate (m^2/p) 9.3 m^2/p Load 49 persons	3.2.17
21.	Barrier-free Design ■ Yes ☐ No (Explain) N/A	3.8
22.	Hazardous Substances ☐ Yes ☐ No	3.3.1.2 & 3.3.1.19
23.	Required Fire Resistance Rating (FRR) — see table below	3.2.2.20.-83 & 3.2.1.4
24.	Spatial Separation - Construction of Exterior Walls — see table below	3.2.3
25.	Plumbing Fixture Requirements — see table below	

Item 23 — Required Fire Resistance Rating (FRR)

Horizontal Assemblies			Listed Design No. or Description (SB-2)
Floors	1	Hours	ULC F818 AT EXISTING
Roof	N/A	Hours	N/A
Mezzanine	1	Hours	N/A
FRR of Supporting Members			
Walls	1	Hours	N/A
Columns	1	Hours	ULC X521 AT EXISTING

Item 24 — Spatial Separation - Construction of Exterior Walls

Wall	Area of EBF (m^2)	LD (m)	L/H or H/L	Permitted Max. % of Openings	Proposed % of Openings	FRR (Hours)	Listed Design of Description	Comb. Const.	Comb. Const. Nonc. Cladding	Non-comb. Const.
North	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
South	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
East	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
West	39	15	N/A	100	51	N/A	N/A	NO	NO	YES

Item 25 — Plumbing Fixture Requirements

Male/Female Count @ 50 %/ 50%, except as noted otherwise	Occupant Load	OB Table Number	Fixtures Required	Fixtures Provided	OBC Reference
Floor GROUND Occupancy A2	UNCHANGED	N/A	EXISTING	EXISTING	N/A

OBC MATRIX - PART 3 & 11 1 A001
1 : 50

DRAWINGS & SPECIFICATIONS OF ALL DISCIPLINES TO BE READ TOGETHER. ANY NOTE, DRAWING, OR DETAIL SHOWN OR SPECIFIED IN ONE DISCIPLINE IS APPLICABLE TO ALL DISCIPLINES.

CONSTRUCTION NOTES:

1. SITE VERIFY ALL DIMENSIONS PRIOR TO INSTALLATIONS.
2. WHERE FIRE SEPARATIONS ARE PENETRATED AS PART OF THE WORK, PROVIDE FIRE STOPPING TO REQ'D RATING.
3. WHERE UNRATED FIRE SEPARATION IS INDICATED, PROVIDE SMOKE SEALANT AT ALL PENETRATIONS & PERIMETER JOINTS.
4. COORDINATE LOCATIONS OF BACKING IN WALL FOR WALL-MOUNTED ELEMENTS (CRASH-RAIL, EQUIPMENT, WASHROOM ACCESSORIES ETC). REFER TO PLANS, INT ELEVATIONS, & SPECIFICATIONS.
5. LOCATIONS OF ELECTRICAL DOOR HARDWARE, WASHROOM ACCESSORIES, EQUIPMENT, HANDRAILS, CRASHRAILS, ETC (AS APPLICABLE) NOT PROVIDED IN INTERIOR ELEVATIONS ARE TO BE CONFIRMED WITH THE ARCHITECT PRIOR TO INSTALLATION.
6. UNLESS NOTED OTHERWISE, MOUNTING FIXTURES, EQUIPMENT, ETC ACROSS BUILDING EXPANSION JOINTS ON PARTITIONS/WALLS OR CLGS IS NOT PERMITTED.
7. WHERE PROVISION OF FIRE SUPPRESSION COMPONENTS ARE REQ'D AS PART OF THE WORK, SPRINKLER HEAD COUNT, LOCATION, & STYLE SHOWN ARE FOR GENERAL DESIGN PURPOSES ONLY.
8. SPRINKLER CONTRACTOR TO PRICE A COMPLETE & OPERATIONAL SYSTEM AND INCLUDE SUFFICIENT QUANTITIES & STYLES OF HEADS, MATERIALS, PIPE SIZES, FITTINGS, & COMPONENTS FOR AN NFPA 13 COMPLIANT SYSTEM.
9. ANY INFORMATION (E.G., ON EX SYSTEM) REQ'D IS TO BE OBTAINED DIRECTLY BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.
10. SPRINKLER SYSTEM TO BE ACTIVE WHEN WORKERS ARE NOT ON SITE, THROUGHOUT THE LENGTH OF THE PROJECT; WHEN NOT FEASIBLE, CONTRACTOR TO MEET REQUIREMENTS OF THE MUNICIPAL AUTHORITY VIA FIRE ALARM SYSTEM (ACTIVE SMOKE DETECTORS) OR BY PROVIDING FIRE WATCH.
11. ALLOW FOR RELOCATION OF FIXTURES & DEVICES WITHIN 3050MM OF LOCATION SHOWN - PRIOR TO INSTALLATION, AT NO ADDITIONAL COST TO CONTRACT.
12. PROVIDE CONTINUOUS BEAD OF SILICONE COLOUR-MATCHED SEALANT AT ALL JOINTS OF DISSIMILAR MATERIALS AND/OR SURFACES (TILE, CRASH-RAIL, FLOORING BASE, ETC) IN FINISHED SPACES AS APPLICABLE.
13. FIRE RESISTANCE RATINGS ARE INDICATED AT PARTITIONS. PARTITIONS SHOWN RATED ARE TO BE CONSTRUCTED AS FIRE-SEPARATION ASSEMBLIES BUILT TO U/S ROOF OR FLOOR/DECK ABOVE. FOR PARTITIONS SHOWN RATED, PROVIDE FIRE-STOPPING AT TOP OF WALL AND AT PENETRATIONS.

GENERAL NOTES NEW CONSTRUCTION 8 A001
1 : 50

▨	EXISTING WALL TO REMAIN
═	NEW WALL
- - -	EXISTING ITEM (WALL, DOOR, FIXTURE, MILLWORK, ETC.) TO BE DEMOLISHED
⌒	EXISTING DOOR & FRAME TO REMAIN
⌒	NEW DOOR & FRAME
- - -	1 - HOUR F.R.R.
┼┼┼	HOARDING
— - —	EXISTING F.R.R.

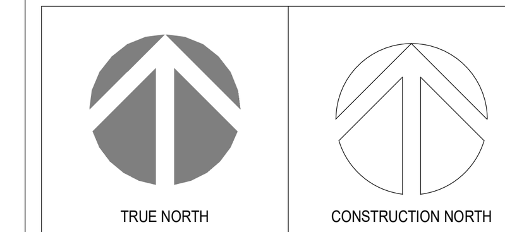
SYMBOL LEGEND 7 A001
1 : 50

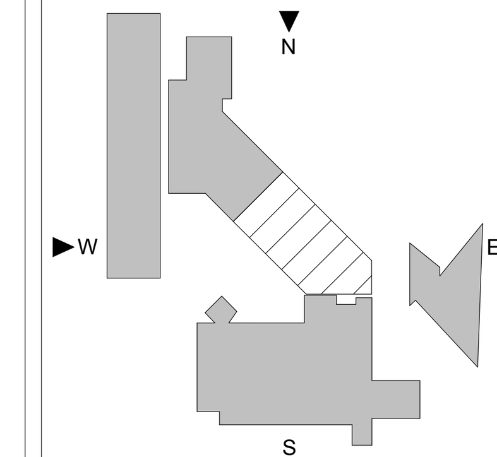
AB	AIR BARRIER
ACP	ALUMINUM COMPOSITE PANEL
ACT	ACOUSTIC CEILING TILE (INCL GRID SYSTEM UNO)
ACOUS	ACOUSTIC
ADJ	ADJACENT
AFB	ACOUSTIC FIRE BATT
AFF	ABOVE FINISHED FLOOR
AHU	AIR-HANDLING UNIT
AL/ALUM	ALUMINUM
ANOD	ANODIZED
AP	ACOUSTIC PANEL
APPROX	APPROXIMATELY
AR	ABUSE-RESISTANT
ARCH	ARCHITECTURAL
AVB	AIR VAPOR BARRIER
BD	BOARD
BF	BARRIER-FREE
BLDG	BUILDING
BLK	BLOCK
BN	BULLNOSED
BRK	BRICK
BSMT	BASEMENT
CB	CATCH BASIN
CG	CORNER GUARD
CIP	CAST-IN-PLACE
CJ	CONTROL JOINT
CL	CENTRE LINE
CLG	CEILING
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONT	CONTINUOUS
COORD	COORDINATION
CORR	CORRIDOR
CR	CRASH RAIL
CRS	COURSE
CT	CERAMIC TILE
C/W	COMPLETE WITH
DBL	DOUBLE
DBN	DOUBLE BULLNOSED
DC	DOOR CLOSER
DEMO	DEMOLITION
DF	DRINKING FOUNTAIN
DIA	DIAMETER
DIM	DIMENSION
DN	DOWN
DS	DOOR STOP (WALL)
DSOH	DOOR STOP OVERHEAD
DTL	DETAIL
DWG	DRAWING
EA	EACH
EIFS	EXTERIOR INSULATION FINISH SYSTEM
EJ	EXPANSION JOINT
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQP	EQUIPMENT
EX	EXISTING
EXP	EXPOSED
EXT	EXTERIOR
FD	FLOOR DRAIN
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FHC	FIRE HOSE CABINET
FIN	FINISHED
FLR	FLOOR
FR	FRAME
FRR	FIRE RESISTANCE RATING
FT	FEET
FTG	FOOTING
FUR	FURNITURE
GA	GAUGE
GALV	GALVANIZED
GL	GLASS
GLAZ	GLAZING
GRD	GROUND
GWB	GYPSUM WALL BOARD
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HR	HOUR
HSS	HOLLOW STEEL SECTION
HT	HEIGHT
HVAC	HEATING, VENTILATION, AND AIR CONDITIONING
IGU	INSULATED GLAZING UNIT
IN	INCHES
INCL	INCLUDING
INSUL	INSULATION
INT	INTERIOR
IR	IMPACT-RESISTANT
KP	KICK PLATE
KSP	KEY PAD
LAM	LAMINATED
LAV	LAVATORY
LS	LOCKSET
LINO	LINOLEUM
M	METRES
MANUF	MANUFACTURER
MAT	MATERIAL
MAX	MAXIMUM
MDF	MEDIUM DENSITY FIBREBOARD
M&E	MECHANICAL AND ELECTRICAL
MECH	MECHANICAL
MEMB	MEMBRANE
MIN	MINIMUM
MIR	MIRROR
ML	MAG LOCK
MLWK	MILLWORK
MM	MILLIMETRES
MOD	MODIFIED BITUMEN
MSU	MEDICAL SERVICE UNIT
MTL	METAL
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OBC	ONTARIO BUILDING CODE
OC	ON CENTRE
OFD	OVERFLOW DRAIN
OWSJ	OPEN-WEB STEEL JOIST
P	PAINT
PART	PARTITION
PBD	PUSH BUTTON FOR DOOR
PH	PANIC HARDWARE
PKG	HARDWARE PACKAGE
PLAM	PLASTIC LAMINATE
PLYWD	PLYWOOD
POLY	POLYURETHANE
P/P	PUSH PULL
PREFIN	PREFINISHED
PRHT	PARTIAL HEIGHT
PRV	PRIVACY
PS	PASSAGE SET
PT	PRESSURE TREATED
PTS	PNEUMATIC TUBE SYSTEM
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REINF	REINFORCING
RENO	RENOVATION
REQD	REQUIRED
RES	RECESSED
RM	ROOM
RO	ROUGH OPENING
RUB	RUBBER
RWL	RAIN-WATER LEADER
RSF	RESILIENT SHEET FLOORING
S	SINK
SEG	SEGREGATION
SF	SQUARE FEET
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SOG	SLAB ON GRADE
SPEC	SPECIFICATION
SRF	SOLID SURFACING
SS	STAINLESS STEEL
ST	STAINED
STC	SOUND TRANSMISSION CLASS
STL	STEEL
STRUCT	STRUCTURAL
SUSP	SUSPENDED
TB	THERMALLY BROKEN
TL	TILE
TBD	TO BE DETERMINED
TEMP	TEMPERED
THK	THICK
T/O	TOP OF
TRAN	TRANSITION
TTL	THUMB TURN LOCK
TWF	THROUGH WALL FLASHING
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
U/S	UNDERSIDE OF
VB	VAPOUR BARRIER
VCT	VINYL COMPOSITE TILE
VERT	VERTICAL
VR	VAPOUR RETARDER
W/	WITH
WC	WATER CLOSET
WD	WOOD
W/O	WITHOUT
WP	WALL PROTECTION
WPM	WATER PROOF MEMBRANE
WR	WASHROOM
WS	WEATHER STRIPPING
WWM	WELDED WIRE MESH

ABBREVIATIONS 10 A001
1 : 50

D 610x914

Brock University
PROJECT LOGO





KEY PLAN

No.	DESCRIPTION	DATE
14	ISSUED FOR PHASE 2 TENDER	22/11/01
13	ISSUED FOR DEMO TENDER	22/05/13
9	ISSUED FOR TENDER	22/01/24
8	ISSUED FOR COSTING	21/12/07
7	ISSUED FOR PERMIT	21/11/24
6	ISSUED FOR COORDINATION	21/10/07
5	ISSUED FOR COORDINATION	21/07/16

REVISIONS:

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT BEFORE PROCEEDING.
ONLY FIGURED DIMENSIONS MUST BE USED.
THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.

DO NOT SCALE THE DRAWINGS.

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286 Sanford Ave. N
Hamilton, ON L8L 6A1
905.526.6700
www.mccallumsather.com

SEAL

CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
GENERAL NOTES, ASSEMBLIES & SITE PLAN

DRAWN BY: Author	DATE: 07/19/21
CHECKED BY: Checker	SCALE: As indicated

PROJECT NO.: 20050

DRAWING NO.: **A001**

FILENAME: C:\Users\adamm\Documents\20050_MCA RENO-A-v21_adammRNCJS.rvt
PLOTDATE: 2022-11-02 11:27:01 AM

ROOM FINISH SCHEDULE

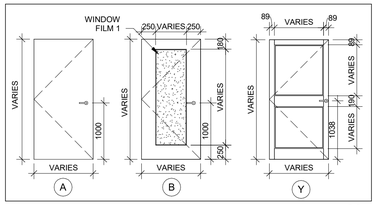
ROOM NO.	ROOM NAME	ROOM FLOOR FINISH	ROOM WALL BASE	WALL FINISH NORTH	WALL FINISH EAST	WALL FINISH SOUTH	WALL FINISH WEST	CEILING	COMMENTS
A218	LINK	T2, GRILLE	T2	SC1	EX	EX	GL	WS + GWB	FLOOR GRILLE TO BE RECESSED
A219	VESTIBULE	GRILLE	RB	P	GL	EX	SC1	GWB	FLOOR GRILLE TO BE SURFACE MOUNTED
A220	EX. COMM. / I.T.	EX	EX	EX	EX	EX	EX	EXP	PT INFILL WALL TO MATCH EXISTING
A221	CORRIDOR	T1	T1	P, SC1	P, SC1	-	P, SC1	GWB, ACT	
A221A	ADMIN	T1	T1	P	P	P	-	GWB	
A221B	STOR.	C1	RB	P	P	P	P	GWB	
A221C	SUPPORT	C1	RB	P	P	P	P	ACT	
A221D	WAITING	T1	T1	P	P	P	P	AC + GWB + EXP	
A221E	CORRIDOR	T1	T1	-	P	P	P, SC1	AC + GWB + EXP	
A221F	CORRIDOR	T1	T1	P, SC1	-	P	SC1	GWB	
A221G	CORRDIOR	T1	T1	P, SC1	P, SC1	-	P, SC1	GWB	
A222	OFFICE	C1	RB	P	EX GL	P	SC1	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE, MANUAL ROLLER SHADES
A223	COLLAB/MULTI-PURPOSE	C1 + C2	RB	APF	-	APF	-	AC + EXP	EAST AND WEST OPEN TO COLLAB SPACES
A223A	COLLAB	C1	RB	APF	-	MB	EX GL	WS + GWB	EAST OPEN TO COLLAB/MULTI SPACE, MANUAL ROLLER SHADES
A223B	COLLAB	C1	RB	APF	-	MB	EX GL	WS + GWB	EAST OPEN TO COLLAB/MULTI SPACE, MANUAL ROLLER SHADES
A223C	COLLAB	C1	RB	APF	-	MB	EX GL	WS + GWB	EAST OPEN TO COLLAB/MULTI SPACE, MANUAL ROLLER SHADES
A223D	COLLAB	C1	RB	APF	EX GL	MB	-	WS + GWB	WEST OPEN TO COLLAB/MULTI SPACE, MANUAL ROLLER SHADES
A223E	COLLAB	C1	RB	APF	EX GL	MB	-	WS + GWB	WEST OPEN TO COLLAB/MULTI SPACE, MANUAL ROLLER SHADES
A223F	COLLAB	C1	RB	APF	EX GL	MB	-	WS + GWB	EAST OPEN TO COLLAB/MULTI SPACE, MANUAL ROLLER SHADES
A224	COLLAB	C1	RB	SC1 + P	SC1 + P	SC1 + P	SC1 + P	WS + GWB	
A225	OFFICE	C1	RB	P	SC1	P	EX GL	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE, MANUAL ROLLER SHADES
A226	OFFICE	C1	RB	P	SC1	P	EX GL	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE, MANUAL ROLLER SHADES
A227	OFFICE	C1	RB	P	SC1	P	EX GL	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE, MANUAL ROLLER SHADES
A228	OFFICE	C1	RB	P	EX	P	SC1	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE, MANUAL ROLLER SHADES
A228A	HALLWAY	T1	T1	-	SC1	-	SC1	ACT	
A229	OFFICE	C1	RB	P	sc1	P	EX GL	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE, MANUAL ROLLER SHADES
A230	OFFICE	C1	RB	P	P	P	SC1	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE, MANUAL ROLLER SHADES
A231	OFFICE	C1	RB	SC1	P	EX	P	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE
A232	OFFICE	C1	RB	SC1	P	EX	EX + P	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE
A233	OFFICE	C1	RB	SC1	EX	EX	P	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE
A234	OFFICE	C1	RB	P	P	SC1	P	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE
A235	OFFICE	C1	RB	EX	EX	SC1	SC1	ACT	PRIVACY FILM ON INTERIOR GLAZING, PTD GWB ABOVE

GENERAL NOTES:

1. PAINT ALL EXISTING EXPOSED ELEC & MECH PER SECTION 09 91 10 3.6 AND METAL W/O FIRE PROOFING; COLOUR TO BE BLACK TO MATCH FIRE PROOFING. SUBMIT PHOTO OF PAINT CHIP AGAINST FIRE PROOFING.
2. PROVIDE SAMPLES OF ALL MATERIALS & FINISHES UNLESS NOTED OTHERWISE
3. ALL PRODUCTS AND MATERIALS MUST BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS
4. FOR ADDITIONAL CONSTRUCTION NOTES REFER TO PLANS
5. PROVIDE SMOOTH TRANSITION BETWEEN ALL DISSIMILAR FLOOR MATERIAL AND HEIGHTS. USE CEMENTITIOUS LEVELING COMPOUND BENEATH NEW FLOOR AS REQ'D. AT MINOR TRANSITIONS OF FLOOR HEIGHT PROVIDE BRUSHED STAINLESS STEEL TRANSITION STRIP WHICH COMPLIES WITH OBC BARRIER FREE REQUIREMENTS.
6. COORDINATE CEILING TILE SELECTIONS WITH EX GRIDS TO REMAIN. ENSURE PROPOSED CEILING TILE WILL SUIT EXISTING CEILING GRID THK.
7. WINDOW COVERINGS ALONG EX SOUTHWEST CURTAIN WALL TO EXTEND FROM T/O WINDOW (~3160 AFF) TO T/O FIN FLR. WINDOW COVERINGS ALONG NORTH/EAST CURTAIN WALL AND NEW PUNCHED WINDOWS TO EXTEND FROM T/O WINDOW (2800 AFF) TO T/O WINDOW SILL (870 AFF).

ROOM FINISH LEGEND :

AC - ACOUSTIC CLOUD
ACT1 - 4X4 ACOUSTIC CEILING TILE (WHITE)
APF - ACOUSTIC PANEL - FABRIC (ON GWB)
C - CARPET TILE
EX GL - EX EXTERIOR GLAZING
GR - WALL WASHING LIGHT FEATURE
HS - HAND SANITIZERS (EX)
LVT - LUXURY VINYL TILE
MB- MARKER BOARD (ON GWB)
RB - RUBBER BASE
RS - ROLLER SHADE
SC - SEALED CONCRETE
SC1 - SCREEN / INTERIOR GLAZED PARTITION (GWB ABOVE)
WA - WASHROOM ACCESSORIES
WP - WALL PROTECTION
TB - TACKBOARD
T1 - CERAMIC TILE W/ GRILLE AT DOORS
T2 - CERAMIC TILE
VW - FEATURE VINYL WALL
WS - WOOD SLATS W/ INTEGRATED LIGHTING



DOOR TYPES 5
1 : 50 A002

DOOR / FRAME SCHEDULE

NO.	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	DOOR TYPE	DOOR MAT.	DOOR FINISH	DOOR GLASS	FRAME PROFILE	FRAME MAT.	FRAME FINISH	FRR	HARDWARE GROUP	HARDWARE & REMARKS
MCA218	2030	2135	45	Y	AL	ANOD.	TEMP	FP4	AL	ANOD	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA218-EX1	2030	2135	45	Y	AL	ANOD.	TEMP	FP4	AL	ANOD	-		REFER TO 08 71 01 HARDWARE GROUPS, ADD TIED TO EXT. BOLLARD.
MCA219	2030	2135	45	Y	AL	ANOD.	TEMP	FP4	AL	ANOD	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA219-EX1	2030	2135	45	Y	AL	ANOD.	TEMP	FP4	AL	ANOD	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA220	1015	2135	45	A	HM	PT	-	FP3	HM	PT	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA221A	1015	2135	45	A	SCWD	PLAM	TEMP	FP3	HM	PT	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA221B	1220	2135	45	A	HM	PT	-	FP3	HM	PT	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA222	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA223	1015	2135	45	B	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA223-1	1015	2135	45	B	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA223-2	1015	2135	45	A	SCWD	PLAM	-	FP3	HM	PT	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA223-3	1015	2135	45	A	SCWD	PLAM	-	FP3	HM	PT	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA224	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA225	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA226	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA227	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA228	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA229	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA230	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA231	1015	2135	45	B	SCWD	PLAM	TEMP	FP1	AL	ANOD.	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA232	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA233	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.	-		REFER TO 08 71 01 HARDWARE GROUPS
MCA234	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS
MCA235	1015	2135	45	A	SCWD	PLAM	TEMP	FP1	AL	ANOD.			REFER TO 08 71 01 HARDWARE GROUPS

NOTE:
1. SINGLE LEAF FOR ALL AUTO DOOR OPERATORS
2. EX (USED WITHIN DOOR NUMBER) = EXTERIOR

GENERAL DEMOLITION NOTES:

1. EX PARTITIONS/WALLS TO BE REMOVED ARE TO BE REMOVED TO U/S EX STRUCTURE ABOVE. UNLESS NOTED OTHERWISE. EX PARTITIONS/WALLS INCLUDE VARIOUS TYPES (GWB ON MTL STUD, CONC BLOCK, ETC); BIDDERS OF ALL DISCIPLINES ARE RESPONSIBLE TO AUDIT THE SITE DURING THE TENDER PERIOD TO DETERMINE FULL SCOPE OF DEMOLITION AND TO IDENTIFY EX ASSEMBLY TYPES; ALLOW FOR APPROPRIATE PROCEDURES FOR REMOVAL & FOR PATCH/REPAIR.

2. MAKE GOOD ALL ADJACENT SURFACES AT EX ITEMS TO BE REMOVED. ALLOW FOR PATCH & REPAIR OF EX WALL, FLOOR, & CLG SURFACES FROM WHICH ITEMS ARE TO BE REMOVED. IF REMOVAL OF WALL-MOUNTED EQUIPMENT/FINISHES RENDERS EX GWB/PLASTER UNUSABLE FOR FINISH SURFACE, REPLACE DAMAGED GWB AS REQ'D.

3. WHERE A NEW FLOOR FINISH IS INDICATED, REMOVAL OF EX ASSEMBLY IS REQ'D AS PART OF THE WORK. REMOVE ALL EX FLOORING TO EXTENT OF NEW FLOORING AS INDICATED, UNLESS NOTED OTHERWISE. AT ALL EX FLOORING TO BE REMOVED, REMOVE EX WALL BASE, FLOORING, & ASSOCIATED ADHESIVES. PATCH AND REPAIR AS REQ'D; MAKE WALL & FLOOR GOOD TO RECEIVE NEW FINISH.
EX FLOORS INCLUDE VARIOUS TYPES (RSF, VCT, CARPET, TILE, TERRAZZO, ETC); BIDDERS OF ALL DISCIPLINES ARE RESPONSIBLE TO AUDIT THE SITE DURING THE TENDER PERIOD TO DETERMINE FULL SCOPE OF DEMOLITION AND TO IDENTIFY EX ASSEMBLY TYPES; ALLOW FOR APPROPRIATE PROCEDURES FOR REMOVAL & FOR PATCH/REPAIR.

4. INFILL EX CORE-HOLES BEING ABANDONED AS PART OF THE WORK, W/ CAST-IN-PLACE CONC PLUGS C/W FLARED TOPS, SECURED VIA MECHANICAL FASTENERS INTO THE ADJACENT CONC TO REMAIN.

5. AT REMOVED PARTITIONS/WALLS, FLOOR-MOUNTED FIXTURES, ETC WHERE NEW FLOOR FINISH IS NOT REQ'D, PATCH/REPAIR & PROVIDE FLOOR/BASE TO MATCH EX (TYP). AT REMOVED PARTITIONS/WALLS, FLOOR-MOUNTED FIXTURES, ETC WHERE NEW FLOOR FINISH IS REQ'D, PATCH/REPAIR & MAKE GOOD FLOOR TO RECEIVE NEW FINISH.

6. AT EX DOORS TO BE REMOVED, REMOVE EX DOOR, FRAMES, & ASSOCIATED HARDWARE (INCLUDING DISCONNECTION & REMOVAL OF ELECTRICAL/SECURITY DEVICES). STORE AT DESIGNATED LOCATION TO BE SELECTED ON-SITE BY OWNER. IF OWNER INDICATES THE MATERIAL IS NOT TO BE RE-USED, CONTRACTOR IS RESPONSIBLE FOR DISPOSAL.

7. EX HARDWARE (OPERATORS, ACTUATORS, HAND-SETS, PANIC BARS, ETC) TO BE REMOVED DUE TO REMOVAL OR RECONFIGURATION OF EX DOORS IS TO BE SALVAGED AND REUSED, STORED, OR DISPOSED OF AT OWNER'S DISCRETION. PROVIDE A DOCUMENT IDENTIFYING THE ITEM, MAKE/MODEL, AGE, & CONDITION OF SALVAGED HARDWARE FOR REVIEW BY OWNER/CONSULTANTS TO REDUCE THE NUMBER OF ITEMS TO BE SUPPLIED NEW. CONFIRM HOW TO PROCEED PRIOR TO ORDERING NEW HARDWARE.

8. REMOVE & SALVAGE ALL WALL-MOUNTED FURNISHINGS, EQUIPMENT, & ACCESSORIES (DISPENSERS, LITERATURE RACKS, TACK-BOARDS, COAT HOOKS, ETC) & SIGNAGE WITHIN THE AREA OF WORK, PRIOR TO REMOVAL AND REFINISHING OF WALLS. STORE AT DESIGNATED LOCATION TO BE SELECTED ON-SITE BY OWNER. IF OWNER INDICATES THE MATERIAL IS NOT TO BE RE-USED, CONTRACTOR IS RESPONSIBLE FOR DISPOSAL. ALLOW FOR REINSTALLATION OF ITEMS AS INDICATED BY OWNER.

9. COORDINATE ALL DEMOLITION WITH GENERAL CONTRACTOR. EVERY EFFORT HAS BEEN MADE TO OUTLINE THE SCOPE OF DEMOLITION WORK; HOWEVER, THE DEMOLITION DRAWINGS REPRESENT ONLY THE GENERAL LOCATION AND NUMBER OF FITTINGS, FIXTURES, DEVICES, EQUIPMENT, ETC TO ASSIST IN EVALUATING THE SCOPE OF DEMOLITION WORK.IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE DURING THE TENDER PERIOD TO DETERMINE THE EXACT SCOPE OF DEMOLITION WORK AND THOROUGHLY UNDERSTAND THE SITE CONDITIONS FOR CARRYING OUT THE SAME. REQUESTS FOR EXTRAS DUE TO FAILURE TO PROPERLY EVALUATE THE CONDITIONS THAT AFFECT SCOPE OF DEMOLITION WORK WILL NOT BE CONSIDERED.

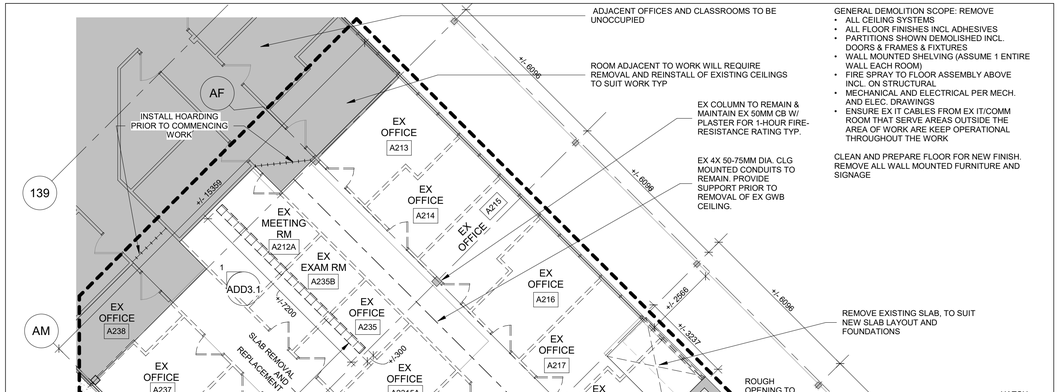
10. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXTENT OF ANY ASBESTOS REMOVAL & REMEDIATION REQ'D AS PART OF THE WORK. IN THE EVENT THAT ASBESTOS IS ENCOUNTERED DURING THE COURSE OF THE CONTRACT WORK, THE CONTRACTOR IS RESPONSIBLE TO NOTIFY THE OWNER AND CONFORM TO THE REQUIREMENTS OF FEDERAL & PROVINCIAL AUTHORITIES.

11. UPON COMPLETION OF DEMOLITION WORK, CONTRACTOR TO EVALUATE EXISTING SITE CONDITIONS AND NOTIFY ARCHITECT & OWNER OF ANY VARIANCES TO WHAT IS SHOWN IN THE DRAWINGS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.

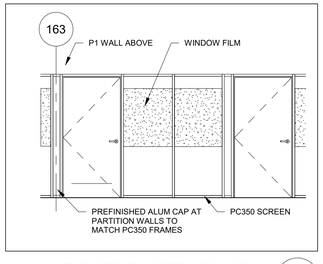
12. WHERE A NEW CLG FINISH OR HT IS INDICATED, REMOVAL OF EX ASSEMBLY IS REQ'D AS PART OF THE WORK. REMOVE ALL EX CLGS TO EXTENT OF NEW FLOORING AS INDICATED. EX CLGS INCLUDE VARIOUS TYPES (ACT, GWB, ETC). BIDDERS OF ALL DISCIPLINES ARE RESPONSIBLE TO AUDIT THE SITE DURING THE TENDER PERIOD TO DETERMINE FULL SCOPE OF DEMOLITION AND TO IDENTIFY EX ASSEMBLY TYPES; ALLOW FOR APPROPRIATE PROCEDURES FOR REMOVAL & FOR PATCH/REPAIR. AT EX CLGS TO REMAIN, CONTRACTOR MAY LEAVE IN PLACE OR REMOVE & REINSTATE AS SITE CONDITIONS & EXTENT OF OTHER PROJECT WORK (E.G., M&E SCOPE) PERMITS. ALLOW FOR ASSOCIATED COSTS AS APPLICABLE.

13. WHEN REMOVING EX WALL AND ROOF ASSEMBLIES, PATCH & MAKE GOOD ADJACENT INSUL & AVB, AND PREPARE FOR TIE-IN TO NEW ASSEMBLIES.

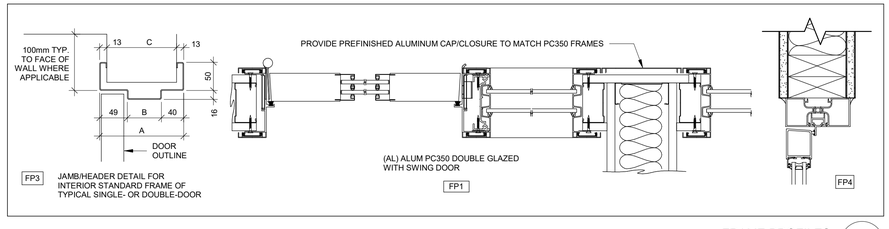
14. REFER TO M&E DEMOLITION DRAWINGS AND ALLOW FOR PATCH & REPAIR OF EX WALL ASSEMBLIES IN ACCORDANCE W/ PIPING & CONDUIT & DUCT REMOVALS (E.G., HYDRONIC PIPING). ROUTING SHOWN FOR EX SERVICES IS APPROX ONLY.



LEVEL 2 - DEMOLITION PLAN 2
1 : 100 A002



TYP OFFICE SCREEN ELEVATION 4
1 : 50 A002



FRAME PROFILES 1
1 : 5 A002

Brock University
PROJECT LOGO
TRUE NORTH
CONSTRUCTION NORTH
KEY PLAN
mcCallumSather
Westinghouse HQ, 2nd Floor
286 Sanford Ave. N
Hamilton, ON L8L 6A1
905.526.6700
www.mccallumsather.com

No.	DESCRIPTION	DATE
14	ISSUED FOR PHASE 2 TENDER	22/11/01
13	ISSUED FOR DEMO TENDER	22/05/13
9	ISSUED FOR TENDER	22/01/24
8	ISSUED FOR COSTING	21/12/07
7	ISSUED FOR PERMIT	21/11/24
6	ISSUED FOR COORDINATION	21/10/07
5	ISSUED FOR COORDINATION	21/07/16
4	ISSUED FOR FINAL REVIEW	20/09/14
3	ISSUED FOR CLIENT MEETING	20/09/04
2	ISSUED FOR CLIENT MEETING	20/08/27
1	ISSUED FOR CLIENT MEETING	20/07/28

REVISIONS:

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT BEFORE PROCEEDING.
ONLY FIGURED DIMENSIONS MUST BE USED.
THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.

DO NOT SCALE THE DRAWINGS.

SEAL

CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
DEMOLITION PLAN, NOTES, SCHEDULES

DRAWN BY:	SFQ	DATE:	20/09/14
CHECKED BY:	CK	SCALE:	As indicated

PROJECT NO.: 20050

DRAWING NO.: **A002**

FILENAME: C:\Users\sfaqiri\Documents\revit\20050_MCA-RENO-A-vf21_sfaqiriRNC.rvt

EXISTING WALL TO REMAIN

NEW WALL

ACT 3000 — CEILING HEIGHT MARKER

4" DIAMETER TRIMMED LED POT LIGHT

2' x 4' LED TROFFER LIGHT

VARIOUS LENGTH LED LINEAR LIGHT

SUSPENDED DOWNLIGHT

WOOD SLAT CEILING

ACOUSTIC CEILING TILES (ACT)

ACOUSTIC CLOUDS W/ LED LIGHTS, CLOUD DIAMETER 1220 & 1828

SYMBOL LEGEND - CEILINGS

12 / A201

1 : 50

RECESSED RETRACTABLE CEILING MOUNTED PROJECTOR SCREEN NIC. COORDINATE OPENING IN GWB AND MISC. METAL SUPPORT WITH OWNER SUPPLIED EQUIPMENT. PROVIDE PREFIN MTL TRIM IN GWB.

16 GWB RETURN ON 92 MTL FRAMING ABOVE TO U/S FLOOR ABOVE TYP

IP CLOCK MOUNTED ABOVE DOOR

PATCH AND REPAIR EX CEILING DUE TO WORK. REINSTATE ALL AFFECTED MECH & ELEC ELEMENTS (EG. GRILLE, LIGHTS) TYP

CEILING MOUNTED PROJECTOR, NIC. PROVIDE STEEL POST FROM CEILING UNISTRUTS WITH DIAGONAL BRACING, BLACK. COORDINATE WITH OWNER SUPPLIED EQUIPMENT MOUNTED AT APPROX. 3000 AFF.

EX COLUMN TYP

EX SOFFIT

PROVIDE SUPPORT FOR EX ELEC IT CONDUITS RUNNING FROM EX COMMIT A220 THROUGH OFFICE A228, CORRIDOR A221F & G and COLLAB MULTI-PURPOSE A223. SUPPORT TO BE UNISTRUT METAL BRIDGE UNDER DUCT. SUPPORTED BY THREADED ROD CLAMPED TO EX BEAMS ABOVE ALONG ENTIRE LENGTH PAINTED BLACK. COORD WITH ACOUSTIC CLOUDS AND ARCHITECT.

EXTERIOR SOFFIT TO MATCH EX W/ EXTERIOR SHEATHING BOARD AND PLASTER

EXTERIOR SHEATHING BOARD AND PLASTER TO BE ON 92 GALV MTL FRAMING @ 610 OC ON 22 GALV STL HAT CHANNELS AT 305 MM OC FASTENED TO EXISTING STRUCTURE

LINEAR FIXTURE FLUSH WITH WOOD SLAT CEILING, TYP.

MECH DUCT AND ELEC CABLE TRAY EXPOSED, PAINTED, TYP

DIFFUSER TYP

EX EXPOSED, NIC

PATCH AND REPAIR EX SOFFIT AT WALL INFILL W/ MATERIALS TO MATCH EX

P1 PARTITION TYP

16 GWB ON 92 MTL FRAMING ABOVE TO U/S FLOOR ABOVE TYP

IP CLOCK MOUNTED ON WALL

CEILING CLOUD HEIGHT MARKERS:
A = 3175 (450 FROM CEILING)
B = 3015 (609 FROM CEILING)
C = 2710 (914 FROM CEILING)
D = 2438 (1183 FROM CEILING)

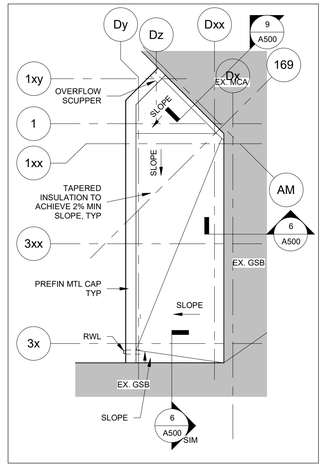
GENERAL CEILING NOTES:
1. ALL STRUCTURAL AND U/S FLOOR ABOVE TO HAVE FIRE PROOFING TO 1-HOUR FRR. INCLUDE TOP 150 MM OF COLUMNS. REPAIR FIRE PROOFING AT ALL REMOVED EX ELEMENTS AND AT NEW ELEMENTS (EG. PARTITION HEAD TRACK).
2. RESERVED.
3. ALL CEILING HEIGHTS ARE INDICATED FROM ABOVE FINISH FLOOR ELEVATION (0).

EX. GOODMAN SCHOOL OF BUSINESS

LEVEL 2 - REFLECTED CEILING PLAN

7 / A201

1 : 100



LINK ROOF PLAN

10 / A201

1 : 100

NOTES:
1. ALL EXTERIOR WALLS TO BE EW1 UNO.
2. ALL INTERIOR PARTITIONS TO BE P1 UNO.
3. ALL INTERIOR PARTITIONS TO EXTEND TO THE UNDERSIDE OF SLAB UNO.
4. ANY DISRUPTION TO EX FIRE SEPARATIONS ARE TO BE PATCHED/REPAIRED WITH MATERIALS THAT MATCH EX FIRE-RESISTANCE RATING.
5. DIMENSION FOR METAL STUD FRAMING IS TO CENTERLINE OF STUD.
6. ALL INTERIOR SCREENS ARE ALUMINUM FRAMED AND EXTEND FROM FIN FLR TO 2192 AFF. WINDOW FILM TO BE PROVIDED AT ALL OFFICE SCREENS FROM 405-1900 AFF.
7. ALL FURRING TO BE TYPE F1 UNO.
8. AT ALL PARTITIONS ABUTTING EX MULLIONS, PROVIDE CLOSURE SIMILAR TO DETAIL 6/A501.

KEY NOTES:
1. WHITEBOARD PANELS ALONG ENTIRE LENGTH OF WALL SEE INTERIOR ELEVATIONS
2. FABRIC ACOUSTIC WALL PANELS SEE INTERIOR ELEVATIONS
3. PROVIDE HORIZONTAL MULLION AT 1050 AFF FOR MOUNTING OF ELECTRICAL DOOR DEVICES

PAINT EX PARTITIONS OF CORRIDOR TO MATCH EX

EX COLUMN TYP

EX CONC WALK

EXTERIOR CONCRETE SLAB SLOPED TO FF

PAINT GWB TO MATCH EX AT ALL PARTITIONS BORDERING AREA OF WORK

EX COLUMNS TO REMAIN WITH 50mm CB FOR 1HR FRR PER OBC SB-2 TABLE 2.6.1.A

PROVIDE 92mm ACOUSTIC INSULATION IN OPENING W/ 62mm MTL FRAMING

PARTITION CENTERED ON GRID

PARTITION CENTERED ON MULLION

TRAVEL DISTANCE 25.3 M

TRAVEL DISTANCE 24.7 M

ALUM CAP AT WALL, TYP.

INFILL CONC SLAB

EX LANDSCAPE

PATCH AND REPAIR EX LANDSCAPE AND IRRIGATION SYSTEM DISTURBED BY WORK, TYP.

STOREFRONT GLAZING

EX CONC BENCH

HEATED CONC SLAB

EX CONC

BOLLARD WITH ADO ACTIVATOR, WIKK SQ2 710

EX CONC CURB; REPLACE WHERE REMOVED FOR WORK

EX. LANDSCAPE

DOOR ROUGH OPENING TO BE CLEAR 100 MM OF EX WALL

MAKE GOOD EX VENEER AT REMOVED LIGHT FIXTURE

SELECT REMOVAL OF EX MASONRY CLAD WALL ASSEMBLY FOR STRUCTURAL TIE IN TYP.

PATCH EX WALL AT PENETRATION FOR SPRINKLER SYSTEM EXTENSION

EX. GOODMAN SCHOOL OF BUSINESS

LEVEL 2 - FLOOR PLAN

1 / A201

1 : 100

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

mcCallumSather
Westinghouse HQ, 2nd Floor
286 Sanford Ave. N
Hamilton, ON L8L 6A1
905.526.6700
www.mccallumsather.com

No.	DESCRIPTION	DATE
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1	ISSUED FOR CLIENT MEETING	20/07/28

REVISIONS:

SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

LEVEL 2 - FLOOR PLAN AND REFLECTED CEILING PLAN

DRAWN BY:	SFQ	DATE:	20/09/14
CHECKED BY:	CK	SCALE:	As indicated

PROJECT NO.: 20050

DRAWING NO.: **A201**

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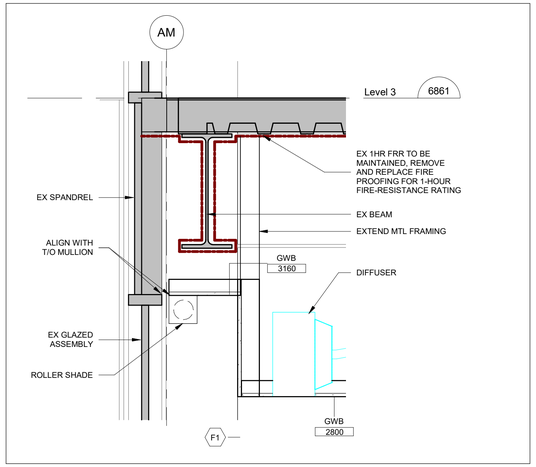
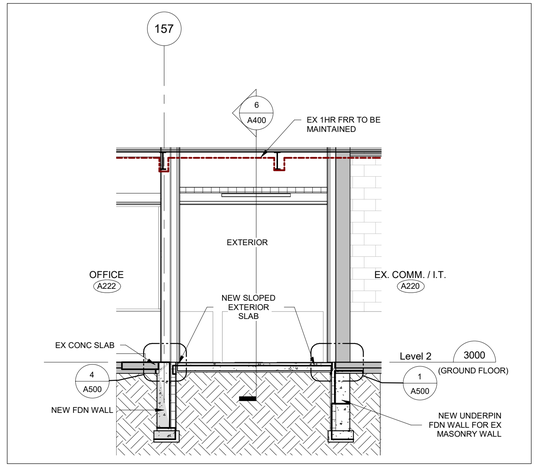


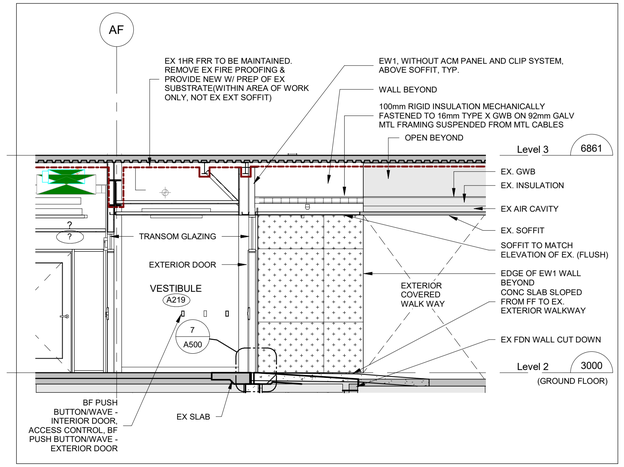
BULKHEAD DETAIL AT EX WINDOWS IN COLLAB A213 — 12 / A400

1 : 10



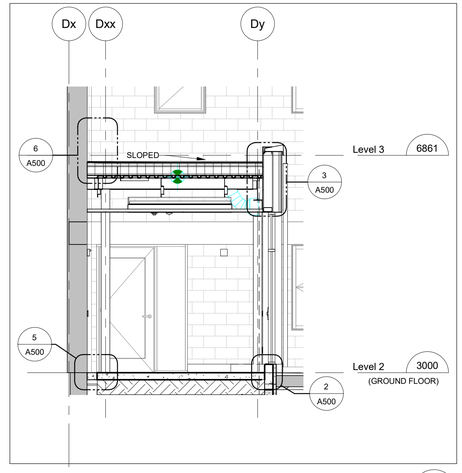
SECTION THROUGH VESTIBULE WALLS — 9 / A400

1 : 50



SECTION THROUGH PROPOSED VESTIBULE — 6 / A400

1 : 50



SOUTH SECTION THROUGH LINK — 3 / A400

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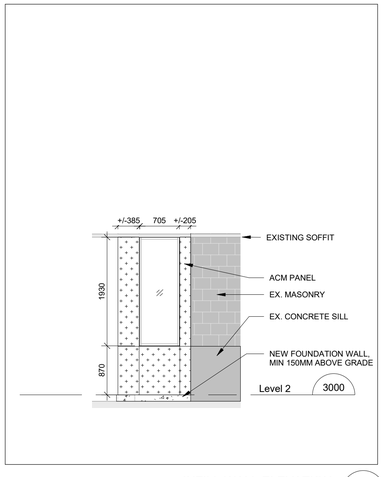
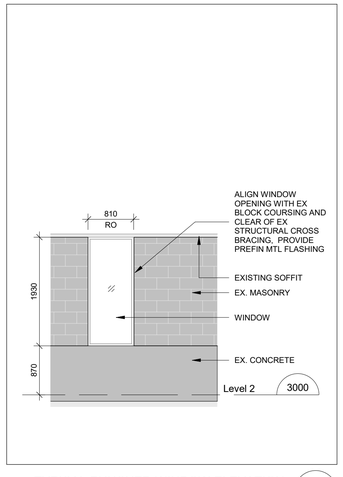


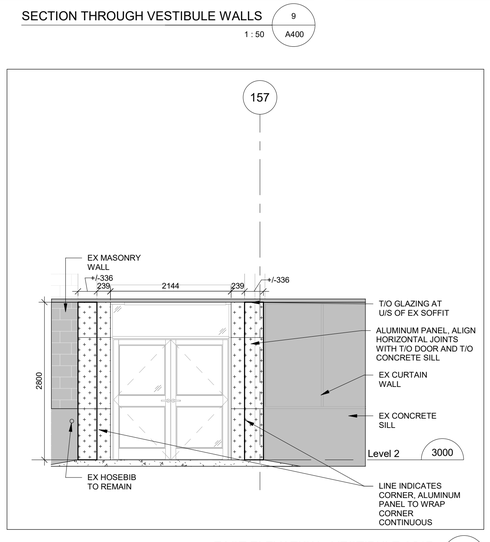
INFILL WALL ELEVATION — 11 / A400

1 : 50



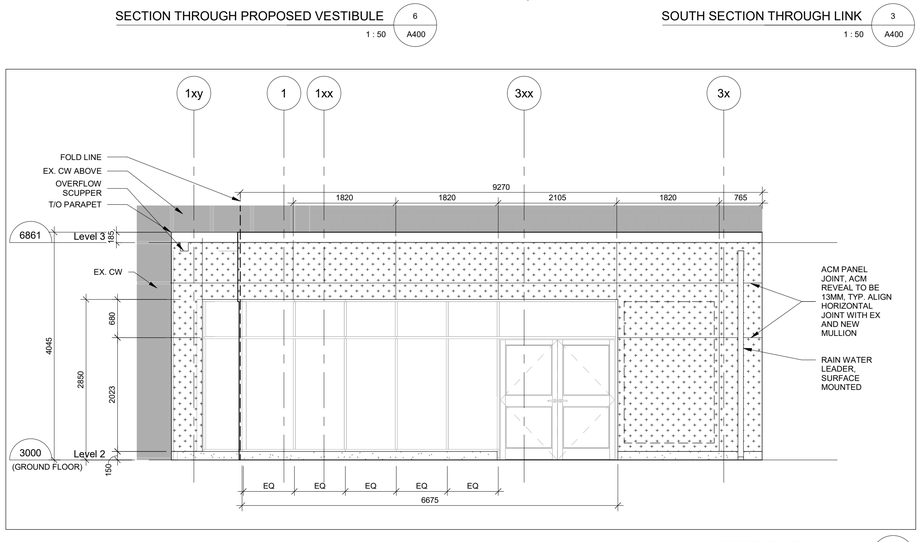
TYPICAL PUNCHED WINDOW ELEVATION — 8 / A400

1 : 50



EAST ELEVATION - VESTIBULE A217 — 5 / A400

1 : 50



WEST ELEVATION - LINK — 2 / A400

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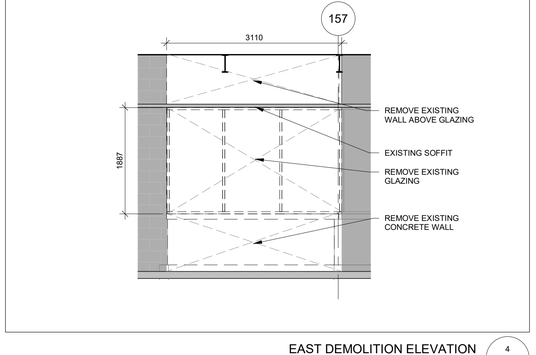
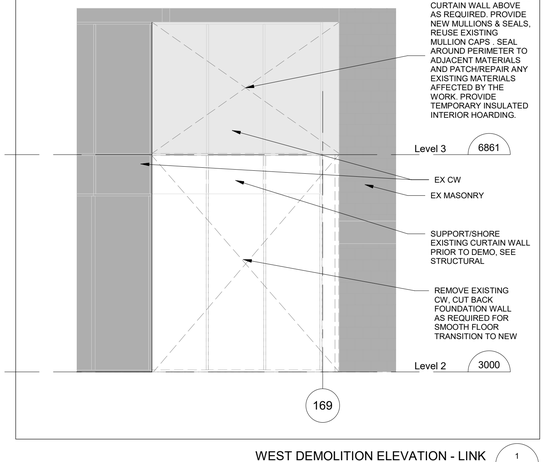


EAST DEMOLITION ELEVATION — 4 / A400

1 : 50



WEST DEMOLITION ELEVATION - LINK — 1 / A400

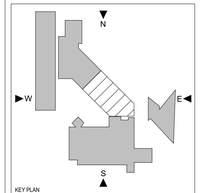
1 : 50

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH



KEY PLAN

ELEVATION LEGEND

- EXISTING BUILDING
- ACM PANEL
- CONCRETE

NOTE: 'LEVEL 2' IS THE GROUND FLOOR

No.	DESCRIPTION	DATE
14	ISSUED FOR PHASE 2 TENDER	22/11/01
9	ISSUED FOR TENDER	22/01/24
8	ISSUED FOR COSTING	21/12/07
7	ISSUED FOR PERMIT	21/11/24
6	ISSUED FOR COORDINATION	21/10/07
5	ISSUED FOR COORDINATION	21/07/16

REVISIONS:

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SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

ELEVATIONS & SECTIONS

DRAWN BY: Author	DATE: 09/02/19
CHECKED BY: Checker	SCALE:

PROJECT NO.: 20050

DRAWING NO.: **A400**

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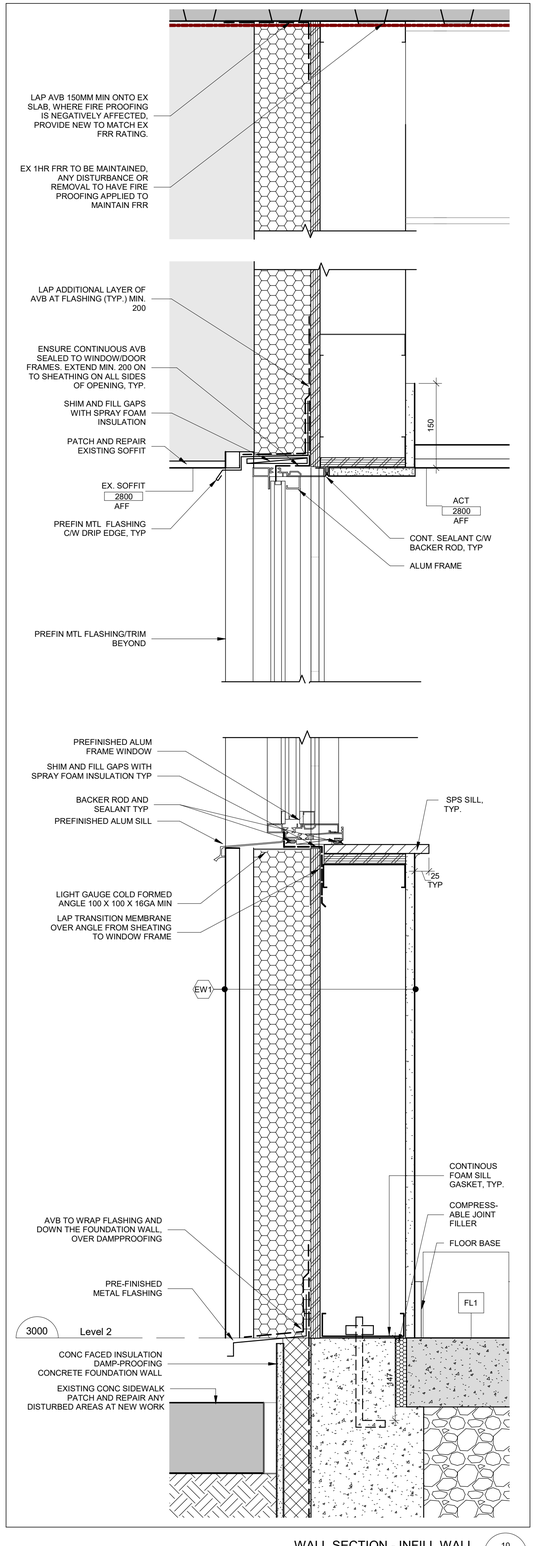
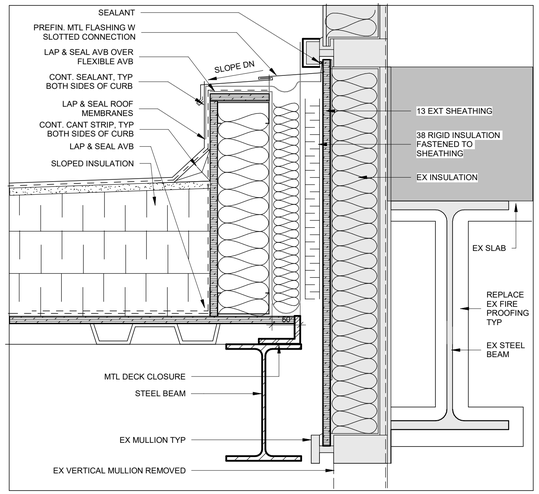
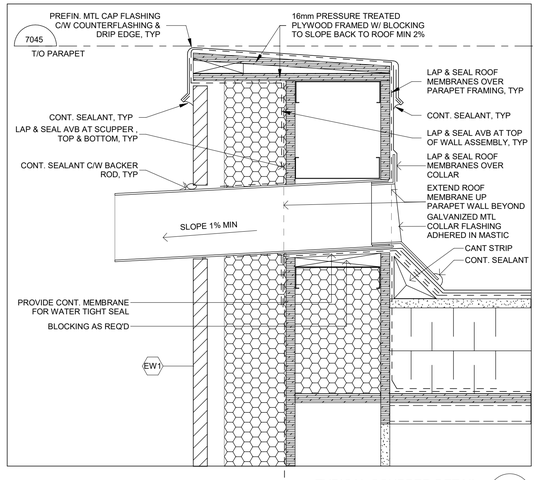
D 610x914



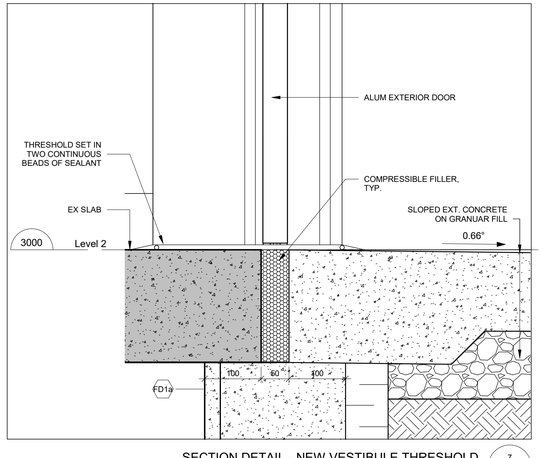
WALL SECTION - INFILL WALL 10 / A500
1 : 5



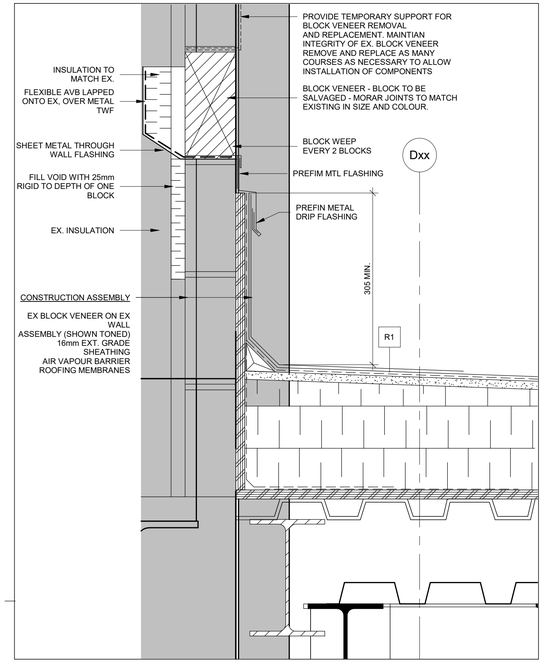
TYPICAL DETAIL, ROOF EDGE TIE-IN 9 / A500
1 : 5



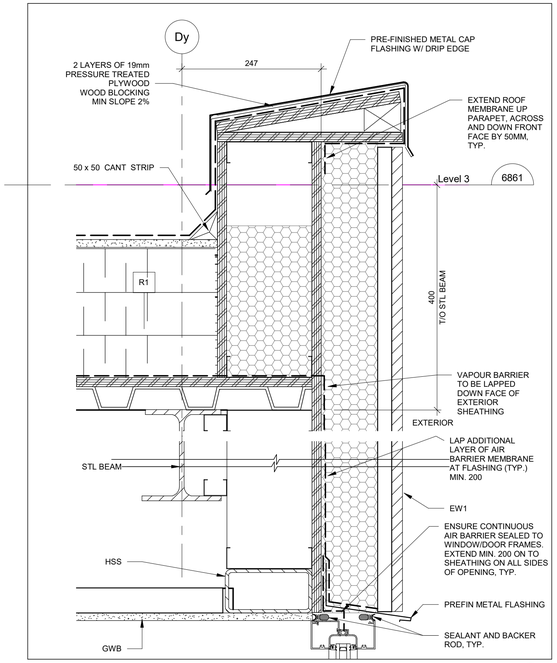
TYPICAL SCUPPER DETAIL 8 / A500
1 : 5



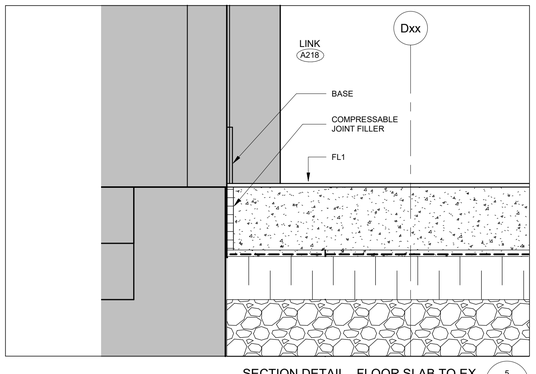
SECTION DETAIL - NEW VESTIBULE THRESHOLD 7 / A500
1 : 5



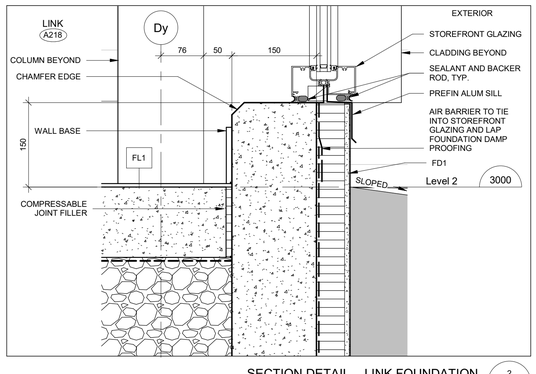
ROOF OF ADDITION TO EX WALL OF GSB 6 / A500
1 : 5



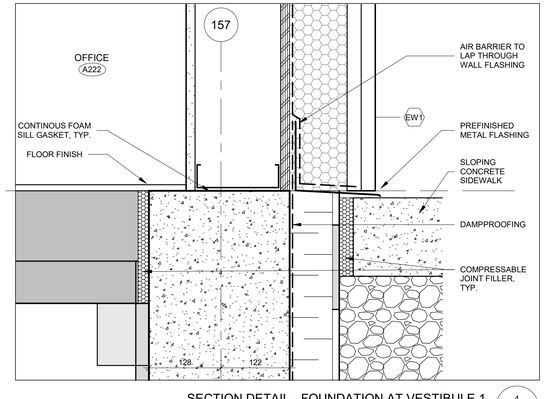
SECTION DETAIL - LINK PARAPET 3 / A500
1 : 5



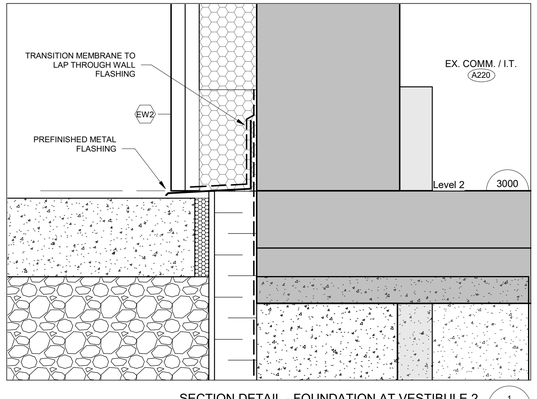
SECTION DETAIL - FLOOR SLAB TO EX 5 / A500
1 : 5



SECTION DETAIL - LINK FOUNDATION 2 / A500
1 : 5



SECTION DETAIL - FOUNDATION AT VESTIBULE 1 4 / A500
1 : 5



SECTION DETAIL - FOUNDATION AT VESTIBULE 2 1 / A500
1 : 5

D 610x914

Brock University

PROJECT LOGO

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KEY PLAN

No.	DESCRIPTION	DATE
14	ISSUED FOR PHASE 2 TENDER	22/11/01
9	ISSUED FOR TENDER	22/01/24
8	ISSUED FOR COSTING	21/12/07
7	ISSUED FOR PERMIT	21/11/24
6	ISSUED FOR COORDINATION	21/10/07
5	ISSUED FOR COORDINATION	21/07/16

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286 Sanford Ave, N
Hamilton, ON L8L 6A1
905.526.6700
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SEAL

CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
SECTION DETAILS

DRAWN BY: Author	DATE: 09/02/19
CHECKED BY: Checker	SCALE:

PROJECT NO.: 20050

DRAWING NO.: **A500**

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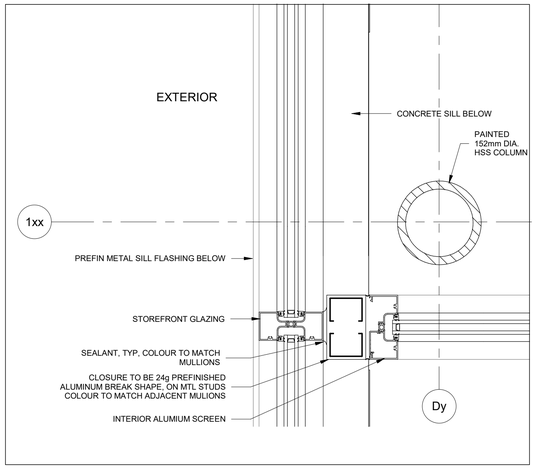
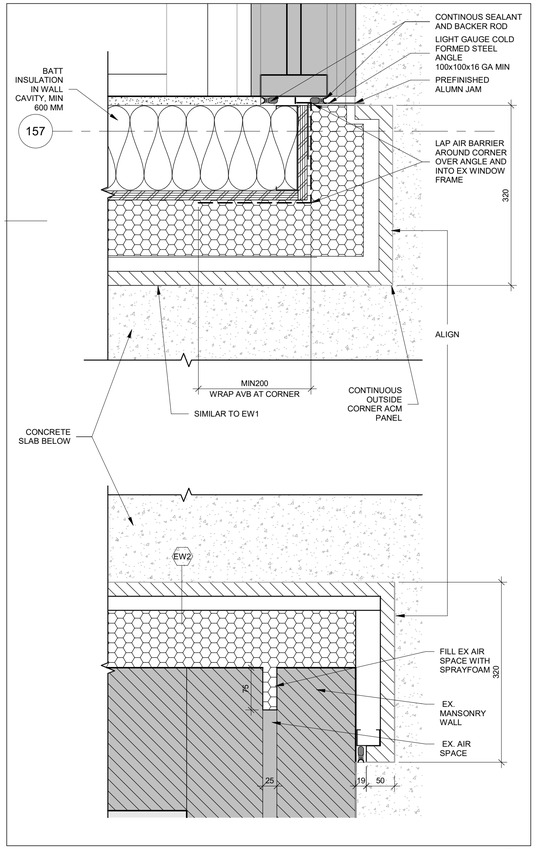
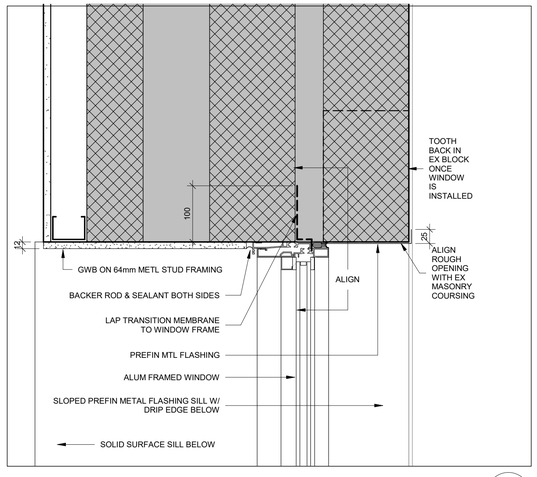


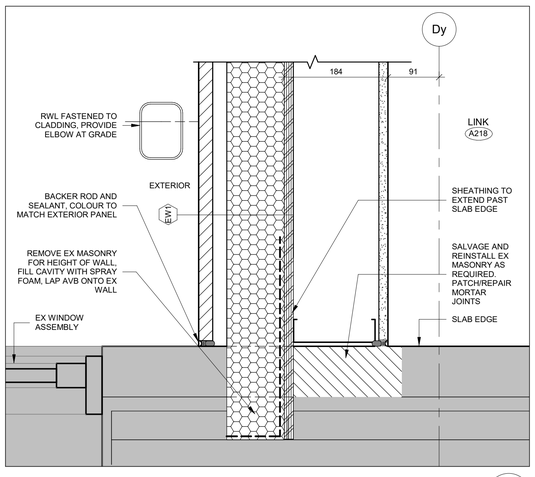
PLAN DETAIL - INTERSECTION OF CURTAIN WALLS LINK A224 (6 / A501)
1 : 5



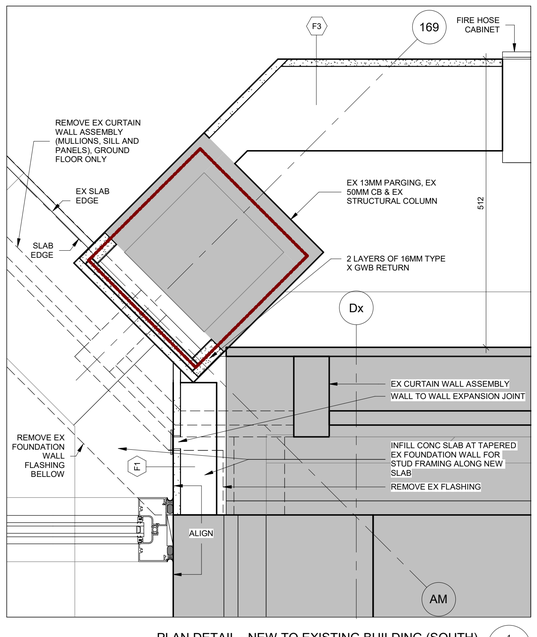
PLAN DETAIL - VESTIBULE A217 (2 / A501)
1 : 5



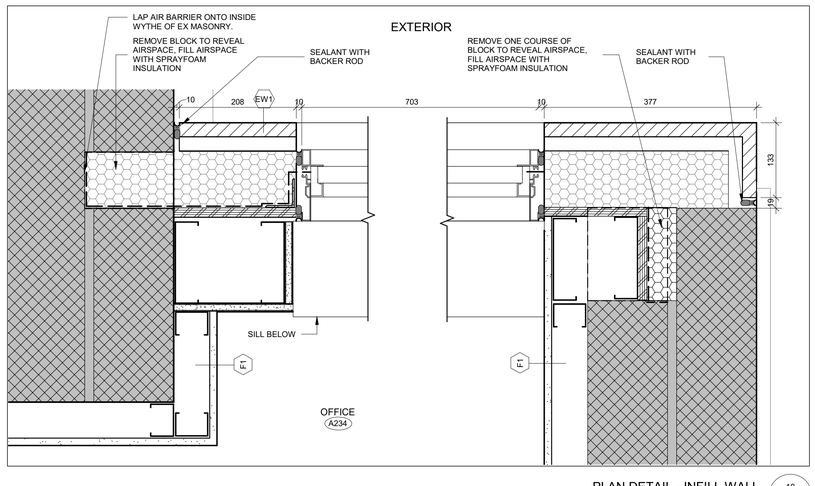
PLAN DETAIL - TYPICAL PUNCHED WINDOW (8 / A501)
1 : 5



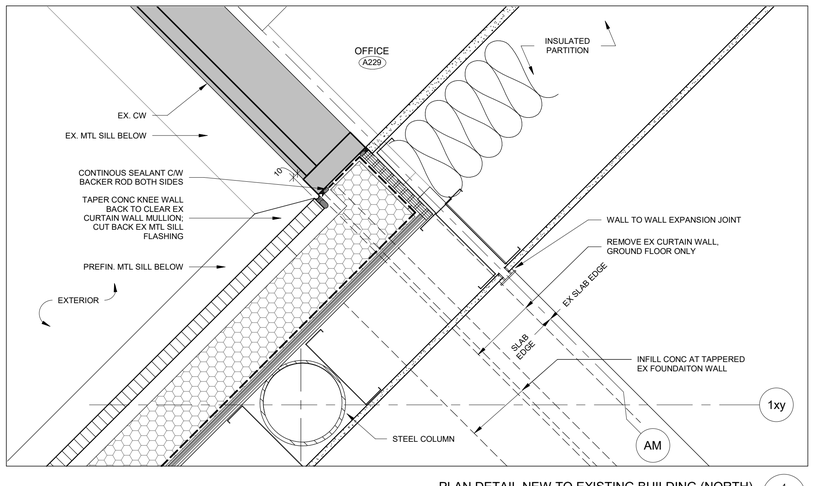
PLAN DETAIL - LINK CONNECTION TO EX BUILDING (5 / A501)
1 : 5



PLAN DETAIL - NEW TO EXISTING BUILDING (SOUTH) (1 / A501)
1 : 5



PLAN DETAIL - INFILL WALL (10 / A501)
1 : 5



PLAN DETAIL NEW TO EXISTING BUILDING (NORTH) (4 / A501)
1 : 5

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Brock University

PROJECT LOGO

TRUE NORTH | CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
14	ISSUED FOR PHASE 2 TENDER	22/11/01
9	ISSUED FOR TENDER	22/01/24
8	ISSUED FOR COSTING	21/12/07
7	ISSUED FOR PERMIT	21/11/24
6	ISSUED FOR COORDINATION	21/10/07
5	ISSUED FOR COORDINATION	21/07/16

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CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
PLAN DETAILS

DRAWN BY: Author	DATE: 07/08/21
CHECKED BY: Checker	SCALE: 1 : 5

PROJECT NO.: 20050

DRAWING NO.: **A501**

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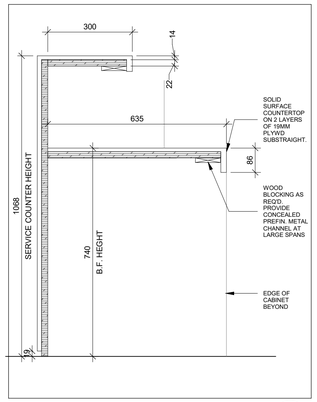
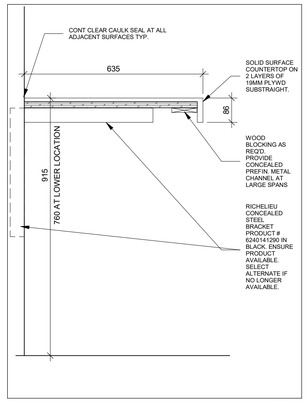
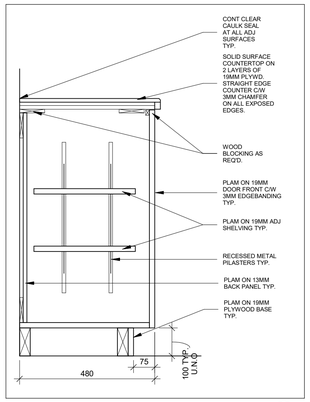


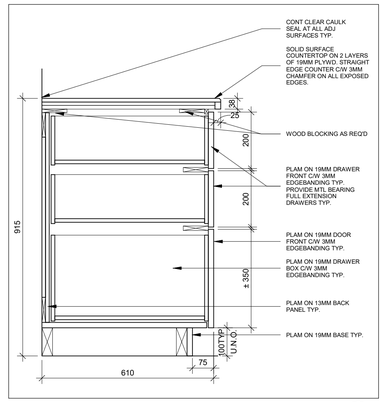
WELCOME DESK SECTION — 21 / A700 — 1 : 10



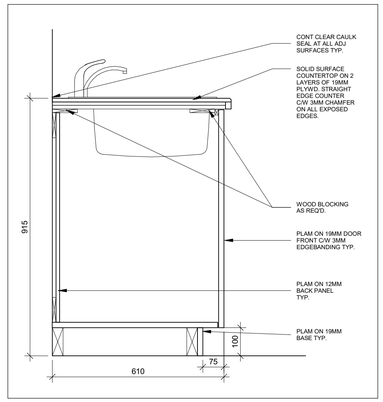
LC-O1 - OPEN BELOW - NO GABLES — 17 / A700 — 1 : 10



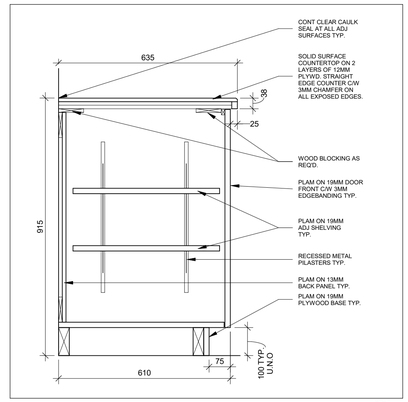
LC - LOWER CABINET W/ DOOR 491 D — 16 / A700 — 1 : 10



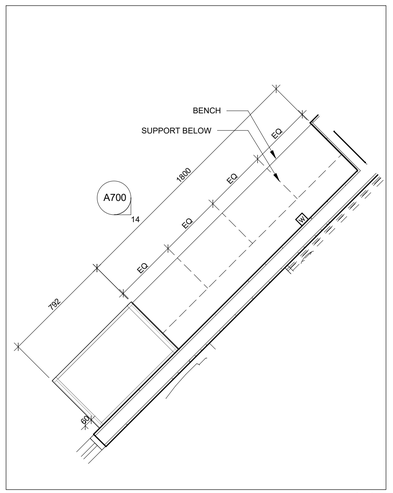
LC-3D - LOWER CABINET W/ 3 DRAWERS — 12 / A700 — 1 : 10



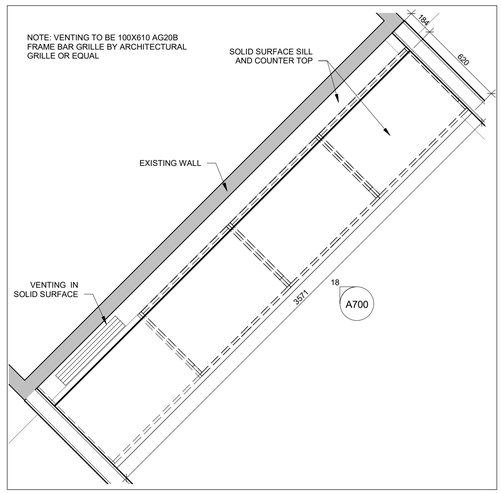
LC-S - LOWER CABINET W SINK (FULL DOOR) — 8 / A700 — 1 : 10



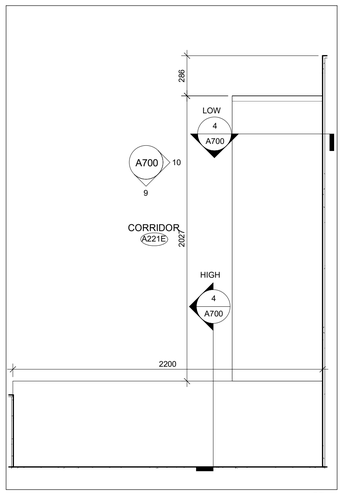
LC - LOWER CABINET W/ DOOR — 4 / A700 — 1 : 10



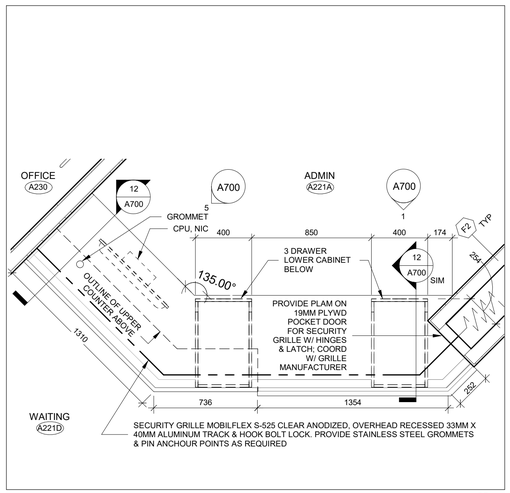
WAITING A218 - DISPLAY CABINET ENLARGED PLAN — 20 / A700 — 1 : 20



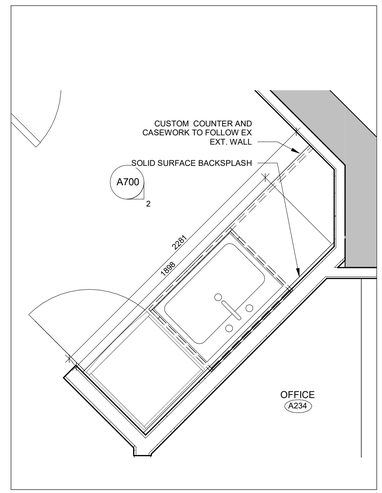
COLLAB / MULTI A213 - MILLWORK ENLARGED PLAN — 15 / A700 — 1 : 20



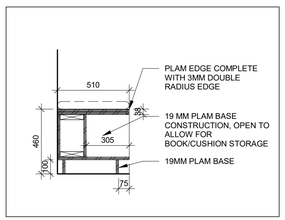
WAITING A225a ENLARGED PLAN — 11 / A700 — 1 : 20



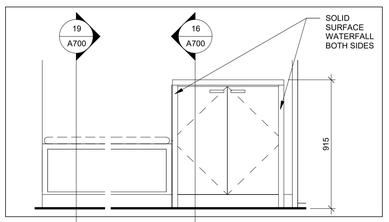
WELCOME A225 - WELCOME DESK ENLARGED PLAN — 7 / A700 — 1 : 20



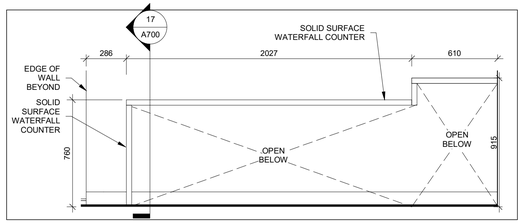
SUPPORT A227 - KITCHENETTE ENLARGED PLAN — 3 / A700 — 1 : 20



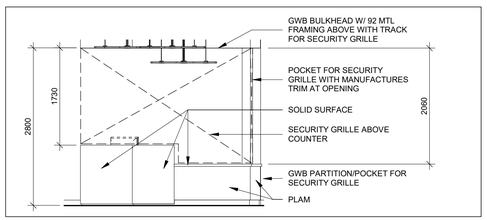
BENCH SECTION — 19 / A700 — 1 : 20



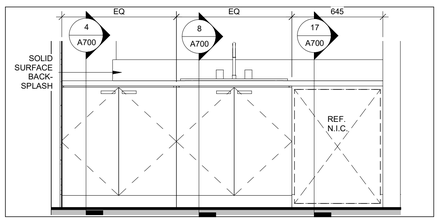
WAITING A218 SOUTH ELEVATION — 14 / A700 — 1 : 20



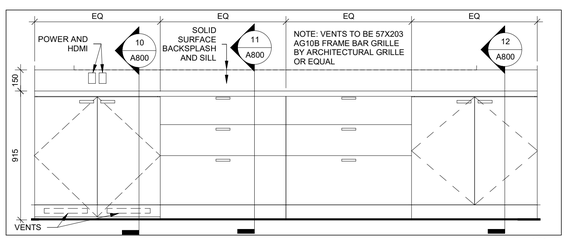
WAITING A225a EAST ELEVATION — 10 / A700 — 1 : 20



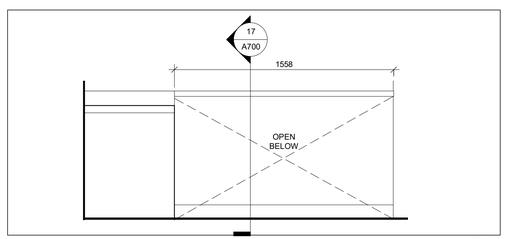
WELCOME DESK FRONT ELEVATION — 6 / A700 — 1 : 50



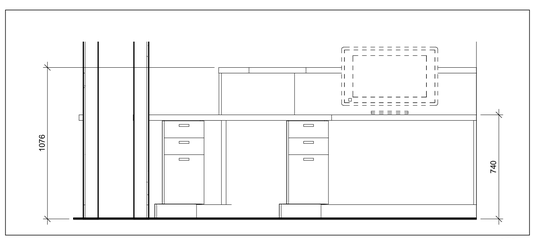
SUPPORT AREA KITCHENETTE ELEVATION — 2 / A700 — 1 : 20



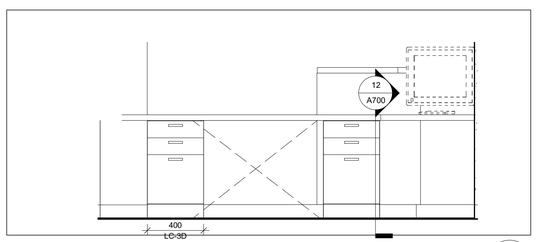
MULTIPURPOSE + COLLAB AREA MILLWORK ELEVATION — 18 / A700 — 1 : 20



WAITING A225a SOUTH ELEVATION — 9 / A700 — 1 : 20



WELCOME DESK WEST ELEVATION — 5 / A700 — 1 : 20



WELCOME DESK ELEVATION — 1 / A700 — 1 : 20

D 610x914

Brock University

PROJECT LOGO

KEY PLAN

No.	DESCRIPTION	DATE
14	ISSUED FOR PHASE 2 TENDER	22/11/01
9	ISSUED FOR TENDER	22/01/24
8	ISSUED FOR COSTING	21/12/07
7	ISSUED FOR PERMIT	21/11/24
6	ISSUED FOR COORDINATION	21/10/07
5	ISSUED FOR COORDINATION	21/07/16

REVISIONS:

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT BEFORE PROCEEDING.
ONLY FIGURED DIMENSIONS MUST BE USED.
THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.

DO NOT SCALE THE DRAWINGS.

mcCallumSather
Westinghouse HQ, 2nd Floor
286 Sanford Ave, N
Hamilton, ON L8L 6A1
905.526.6700
www.mccallumsather.com

SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

MILLWORK PLANS AND INTERIOR ELEVATIONS

DRAWN BY: SFQ	DATE: 20/09/14
CHECKED BY: CK	SCALE: As indicated

PROJECT NO.: 20050

DRAWING NO.: **A700**

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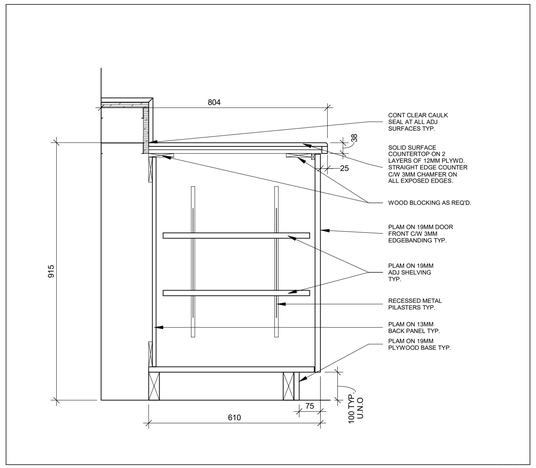
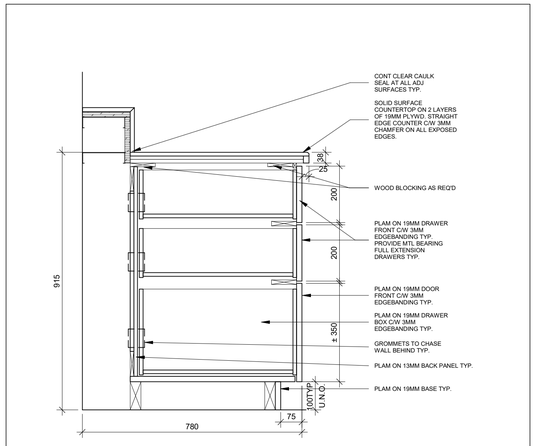
REVISION: 2020-11-01 2:17:07 PM



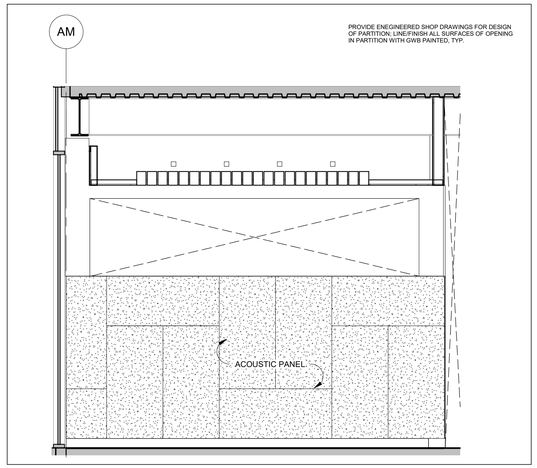
LC - LOWER CABINET W/ DOOR & SERVICE CHASE A223 — 12 / A800

1 : 10



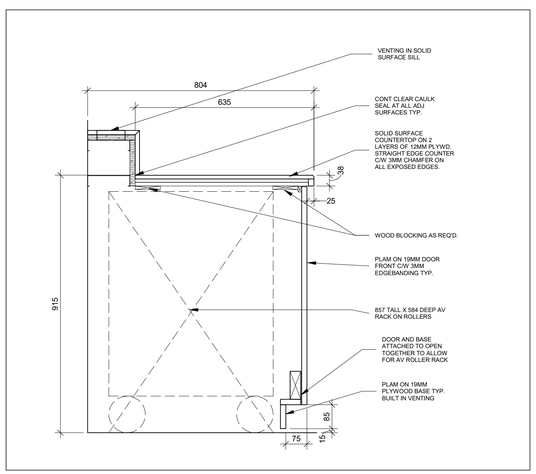
LC-3D - LOWER CABINET W/ 3 DRAWERS & SERVICE CHASE A223 — 11 / A800

1 : 10



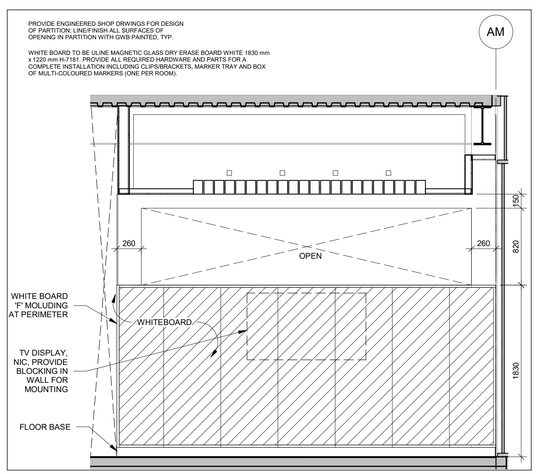
ELEVATION - COLLAB A223 (A,B,C,D,E,F) N/W WALL — 8 / A800

1 : 30



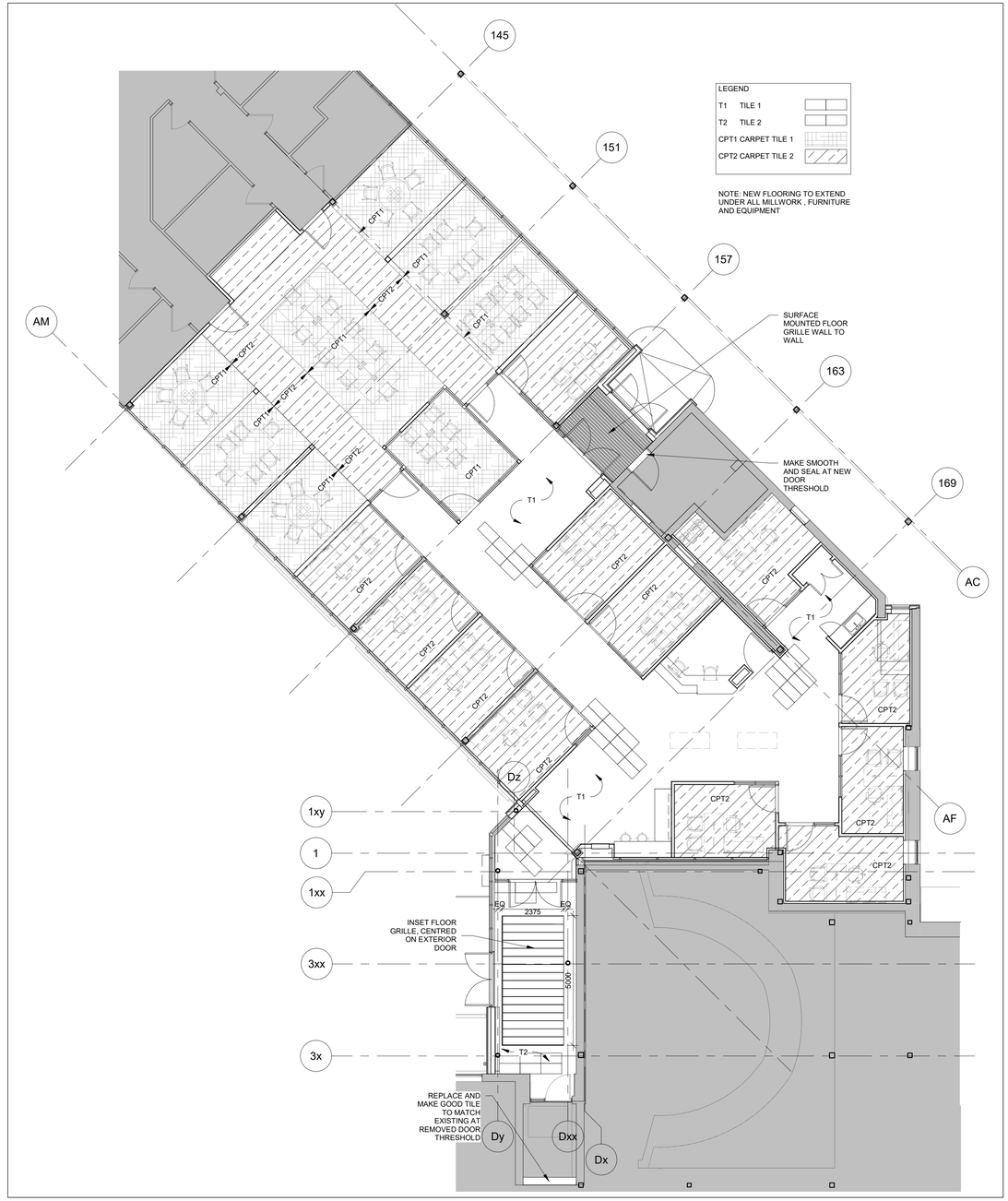
LC - LOWER CABINET W/ DOOR & AV CART A223 — 10 / A800

1 : 10



ELEVATION - COLLAB A223 (A,B,C,D,E,F) S/W WALL — 7 / A800

1 : 30



LEVEL 2 - FLOOR FINISH PLAN — 1 / A800

1 : 100

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
14	ISSUED FOR PHASE 2 TENDER	22/11/01
9	ISSUED FOR TENDER	22/01/24
6	ISSUED FOR COORDINATION	21/10/07
5	ISSUED FOR COORDINATION	21/07/16

REVISIONS:

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SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

FLOOR FINISH PLAN & INTERIOR ELEVATIONS

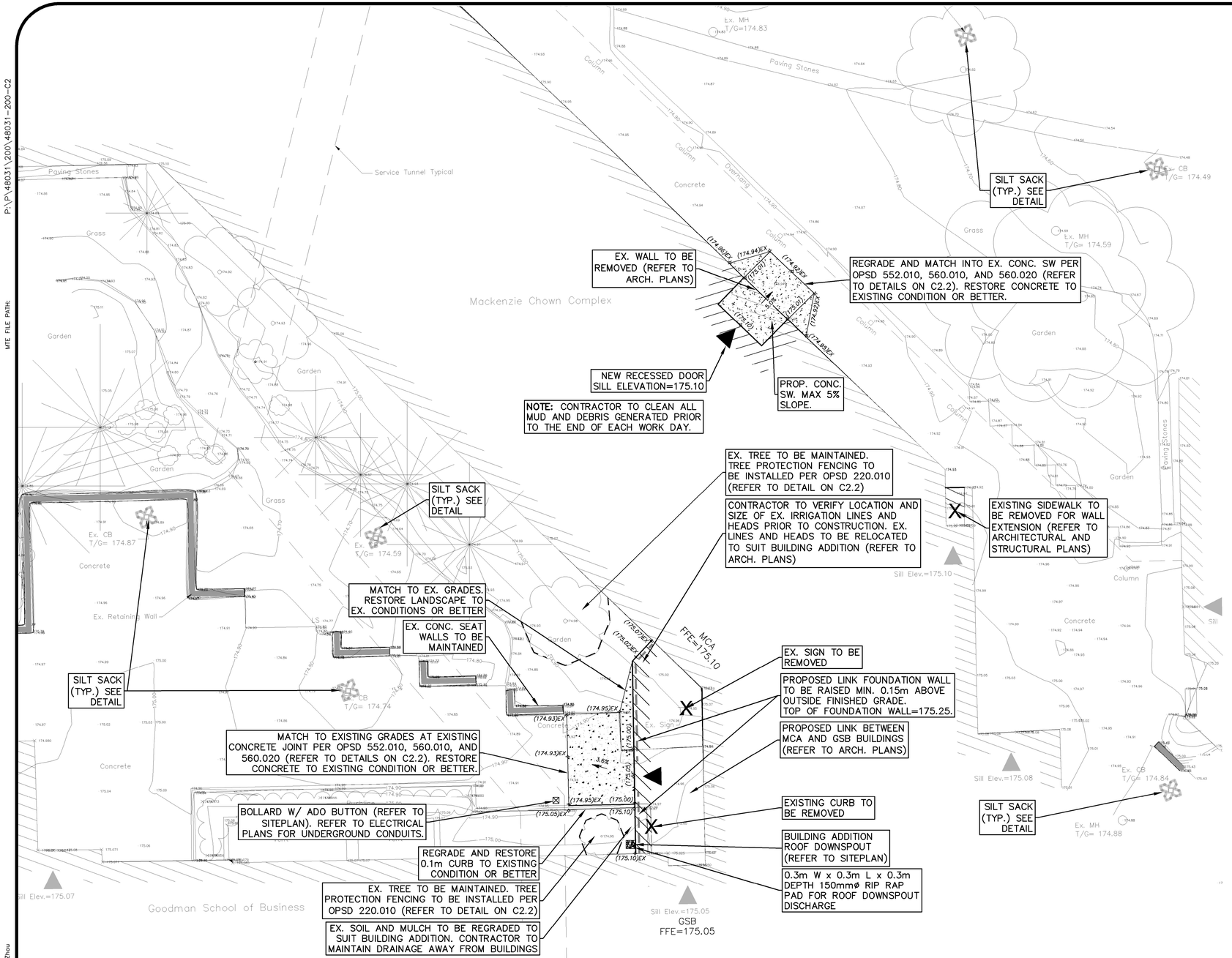
DRAWN BY: Author	DATE: 07/19/21
CHECKED BY: Checker	SCALE: As indicated

PROJECT NO.: 20050

DRAWING NO.: **A800**

FILENAME: C:\Users\adam\Documents\work\20050_MCA RENOVA-D1_adamRNC.rvt
PLOTTED: 8/2021 10:57:37 AM

D 610x914



LEGEND OF EXISTING FEATURES

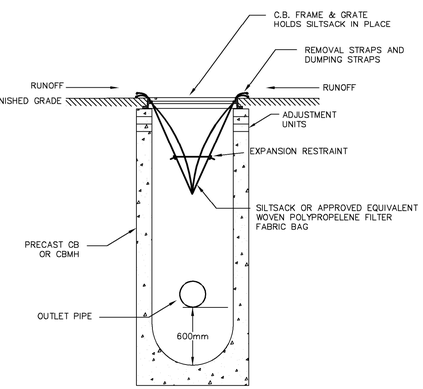
- EASEMENT
- EXISTING SPOT ELEVATIONS/CONTOURS (+ 326.23, 326.00)
- EXISTING CURB (Ex. Drop Curb)
- EXISTING BUILDING
- EXISTING FENCE
- EXISTING RETAINING WALL
- EXISTING MAN DOOR

LEGEND OF PROPOSED FEATURES

- PROPOSED SPOT ELEVATIONS (✧ (326.00), FFE=326.00)
  EX =MAINTAIN EXISTING
  FFE =FINISHED FLOOR ELEVATION
- DIRECTION OF DRAINAGE (1.0%)
- PROPOSED BUILDING
- MAN DOOR
- REMOVALS (X)
- CONCRETE RESTORATION
- LANDSCAPE RESTORATION
- CONCRETE CURB (DROP CURB)
- RAISED FOUNDATION WALL
- SILT SACK (SEE DETAIL)

TEMPORARY SILTSACK SILTATION CONTROL IN CB

N.T.S.



MAINTENANCE SCHEDULE

- INSPECT AFTER EVERY MAJOR RAIN EVENT.
- INSPECT EVERY 3 WEEKS MINIMUM.
- SILTSACK SHOULD NEVER BE OVER HALF FULL.
- FULL BAG CAN BE REMOVED, DUMPED, CLEANED AND REUSED (TO REMOVE INSERT 25mm REBAR INTO REMOVAL FLAP POCKETS) (TO DUMP INSERT 25mm REBAR INTO BOTH DUMPING STRAPS)

1. GENERAL

1.1. THIS PLAN IS NOT FOR CONSTRUCTION UNTIL SIGNED AND SEALED BY ENGINEER AND APPROVED BY THE LOCAL MUNICIPALITY.

1.2. THIS PLAN IS TO BE USED FOR GRADING ONLY AND EROSION & SEDIMENT CONTROL ONLY; ANY OTHER INFORMATION SHOWN IS FOR ILLUSTRATION PURPOSES ONLY. THIS PLAN MUST NOT BE USED TO SITE THE PROPOSED BUILDING.

1.3. NO CHANGES ARE TO BE MADE WITHOUT THE APPROVAL OF THE DESIGN ENGINEER.

1.4. THIS PLAN IS NOT TO BE REPRODUCED IN WHOLE OR IN PART WITHOUT THE PERMISSION OF MTE CONSULTANTS INC.

1.5. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST:

1.5.1. CHECK AND VERIFY ALL EXISTING CONDITIONS, LOCATIONS AND ELEVATIONS WHICH INCLUDES BUT IS NOT LIMITED TO THE BENCHMARK ELEVATIONS, EXISTING SERVICE CONNECTIONS AND EXISTING INVERTS. REPORT ALL DISCREPANCIES TO THE ENGINEER PRIOR TO PROCEEDING.

1.5.2. OBTAIN ALL UTILITY LOCATES AND REQUIRED PERMITS AND LICENSES.

1.5.3. VERIFY THAT THE FINISHED FLOOR ELEVATIONS AND BASEMENT FLOOR ELEVATIONS (WHICH MAY APPEAR ON THIS PLAN) COMPLY WITH THE FINAL ARCHITECTURAL DRAWINGS.

1.5.4. CONFIRM ALL DRAWINGS USED FOR CONSTRUCTION ARE OF THE MOST RECENT REVISION.

1.6. THE CONTRACTOR SHALL ASSUME ALL LIABILITY FOR ANY DAMAGE TO EXISTING WORKS. THE CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ALL DAMAGED AND/OR DISTURBED PROPERTY WITHIN THE MUNICIPAL RIGHT-OF-WAY TO LOCAL MUNICIPALITY STANDARDS

1.7. CONTRACTOR IS RESPONSIBLE FOR CONTACTING ENGINEER 48 HRS PRIOR TO COMMENCING WORK TO ARRANGE FOR INSPECTION. ENGINEER TO DETERMINE DEGREE OF INSPECTION AND TESTING REQUIRED FOR CERTIFICATION OF UNDERGROUND SERVICE INSTALLATION AS MANDATED BY ONTARIO BUILDING CODE, DIVISION C, PART 1, SECTION 1.2.2, GENERAL REVIEW. FAILURE TO NOTIFY ENGINEER WILL RESULT IN EXTENSIVE POST CONSTRUCTION INSPECTION AT CONTRACTORS EXPENSE.

1.8. SITE PLAN INFORMATION TAKEN FROM PLAN PREPARED BY MCCALLUM SATHER ARCHITECTS DATED JULY 16, 2021.

1.9. EXISTING TOPOGRAPHIC AND LEGAL INFORMATION TAKEN FROM PLAN PREPARED BY URBAN & ENVIRONMENTAL MANAGEMENT INC., DATED AUGUST 31, 2021. MTE ASSUMES THAT ALL TOPOGRAPHICAL INFORMATION IS AN ACCURATE REPRESENTATION OF CURRENT CONDITIONS.

1.10. FILTER FABRIC TO BE TERRAFIX 200R OR APPROVED EQUAL.

1.11. MAXIMUM GRASSED SLOPE TO BE 3:1, SLOPES GREATER THAN 3:1 TO BE LANDSCAPED WITH LOW MAINTENANCE GROUND COVER.

1.12. SIDE SLOPES OF ALL STOCKPILES OR EXTRACTION FACES TO BE MAINTAINED AT 70 DEGREES OR LESS BETWEEN EARLY APRIL AND LATE AUGUST TO DETER BANK SWALLOWS FROM NESTING.

1.13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRAFFIC AND SAFETY MEASURES DURING THE CONSTRUCTION PERIOD INCLUDING THE SUPPLY, INSTALLATION AND REMOVAL OF ALL NECESSARY SIGNALS, DELINEATORS, MARKERS, AND BARRIERS. ALL SIGNS, ETC. SHALL CONFORM TO THE STANDARDS OF THE LOCAL MUNICIPALITY AND THE MTO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

1.14. THE POSITION OF POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND, WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, THE CONTRACTOR SHALL INFORM HIMSELF OF THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND SHALL ASSUME ALL LIABILITY FOR DAMAGE TO THEM.

1.15. FOLLOWING COMPLETION OF PROPOSED WORKS AND PRIOR TO OCCUPANCY INSPECTION, ALL STORM AND SANITARY SEWERS ARE TO BE FLUSHED, AND ALL CATCHBASIN AND CATCHBASIN MANHOLE SUMPS ARE TO BE CLEANED OF DEBRIS AND SILT.

2. EROSION AND SEDIMENT CONTROL

2.1. CONTRACTOR TO INSTALL EROSION CONTROL MEASURES AS SHOWN PRIOR TO CONSTRUCTION AND MAINTAIN IN GOOD CONDITION UNTIL CONSTRUCTION IS COMPLETED AND ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED EITHER BY PAVING OR RESTORATION OF VEGETATIVE COVER.

2.2. EROSION PROTECTION TO BE PROVIDED AROUND ALL STORM AND SANITARY MHs AND CBs.

2.3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED AS SITE DEVELOPMENT PROGRESSES. CONTRACTOR TO PROVIDE ALL ADDITIONAL EROSION CONTROL STRUCTURES.

2.4. EROSION CONTROL STRUCTURES TO REMAIN IN PLACE UNTIL ALL DISTURBED GROUND SURFACES HAVE BEEN RESTABILIZED.

2.5. NO ALTERNATE METHODS OF EROSION PROTECTION SHALL BE PERMITTED UNLESS APPROVED BY THE ENGINEER AND THE LOCAL MUNICIPALITY'S DEPARTMENT OF PUBLIC WORKS.

2.6. CONTRACTOR TO CLEAN ROADWAY AND SIDEWALKS OF SEDIMENTS RESULTING FROM CONSTRUCTION TRAFFIC FROM THE SITE EACH DAY.

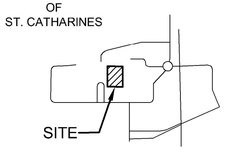
2.7. CONTRACTOR MUST REMOVE EROSION AND SEDIMENTATION CONTROLS PRIOR TO COMPLETION OF PROJECT. CONTRACTOR TO HAVE EROSION AND SEDIMENTATION CONTROLS INSPECTED WHEN VEGETATION HAS ESTABLISHED, BUT PRIOR TO CONTROLS BECOMING OVERGROWN. ENGINEER'S REPRESENTATIVE TO DETERMINE IF VEGETATION HAS REACHED THE CRITICAL POINT AND WILL THEN INSTRUCT CONTRACTOR TO REMOVE CONTROLS.

3. MAINTENANCE RECOMMENDATIONS

3.1. EROSION CONTROL STRUCTURES TO BE MONITORED REGULARLY AND ANY DAMAGE REPAIRED IMMEDIATELY. SEDIMENTS TO BE REMOVED WHEN ACCUMULATIONS REACH THE MAXIMUM AS SPECIFIED.

3.2. OWNER'S REPRESENTATIVE TO MONITOR EROSION CONTROL STRUCTURES TO ENSURE SILT SACKS ARE INSTALLED AND MAINTENANCE IS PERFORMED TO CITY REQUIREMENTS.

CITY OF ST. CATHARINES



KEY PLAN N.T.S.

GEODETIC BM	ELEV. =	N/Am
SITE BENCHMARK	ELEV. =	N/Am

NOTE TO CONTRACTOR :

DO NOT SCALE DRAWINGS.

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No.	REVISION	BY	YYYY-MM-DD
8.			
7.			
6.	ISSUED FOR TENDER	RDZ	2022-01-17
5.	ISSUED FOR 90% CD	RDZ	2021-12-07
4.	ISSUED FOR BUILDING PERMIT	RDZ	2021-11-24
3.	ISSUED FOR 75% CD	RDZ	2021-11-23
2.	ISSUED FOR 50% CD	RDZ	2021-10-07
1.	ISSUED FOR 25% CD	KRR	2021-09-24

MTE
Engineers, Scientists, Surveyors
905-639-2552

NOT FOR CONSTRUCTION

CLIENT

McCALLUM SATHER ARCHITECTS INC.

157 CATHARINE STREET N HAMILTON, ON

PROJECT

BROCK UNIVERSITY GOODMAN SCHOOL

MACKENZIE CHOWN BLOCK A RENOVATIONS

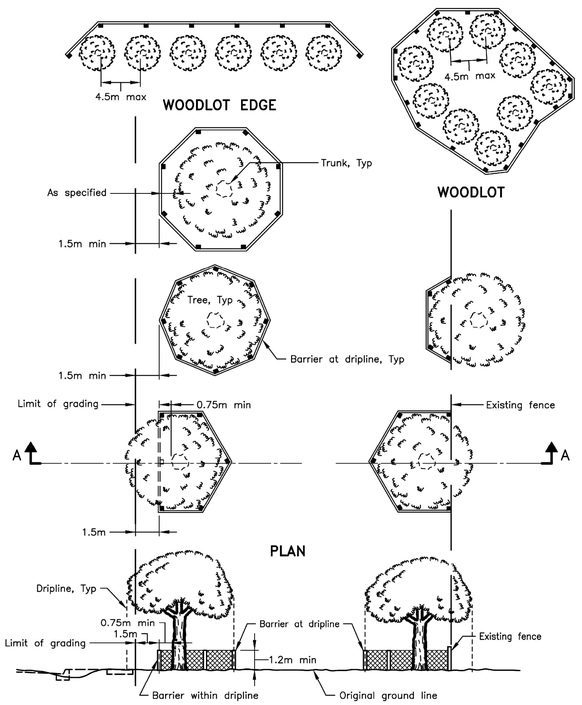
1812 SIR ISAAC BROCK WAY ST, CATHARINES, ON

DRAWING

SITE GRADING & ESC PLAN

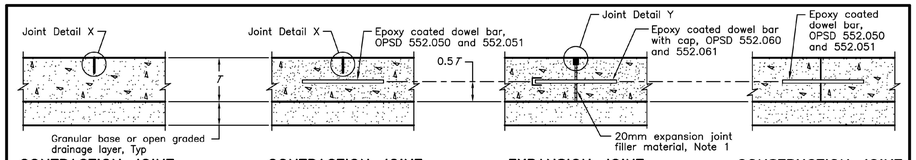
Project Manager	R.ZHOU	Project No.	48031-200
Design By	RDZ	Checked By	KRR
Drawn By	LXQ	Checked By	RDZ
Surveyed By	OTHER	Drawing No.	C2.1
Date	Sep.23/21		
Scale	1:100	Sheet 1 of 2	

P:\P\48031\200\48031-200-C2
MTE FILE PATH:
January 17, 2022 - 3:30:12 PM - Plotted By: Rui Zhou



SECTION A–A

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2019	Rev 1
BARRIER FOR TREE PROTECTION		OPSD 220.010

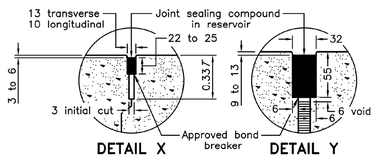


NOTES:
1 Field cut 20mm thick expansion joint filler material, the width of pavement plus shoulder and depth of concrete slab less the depth of reservoir.
2 Use 15x760mm epoxy coated deformed tie bars spaced at 600mm OC at 0.5T.
3 Depth of curb and gutter shall be extended to coincide with bottom of concrete slab.

A Paving width shall not exceed 4.5m without a longitudinal joint. Where paving width is greater than 4.5m, the longitudinal joints shall be located at the lane delineations.

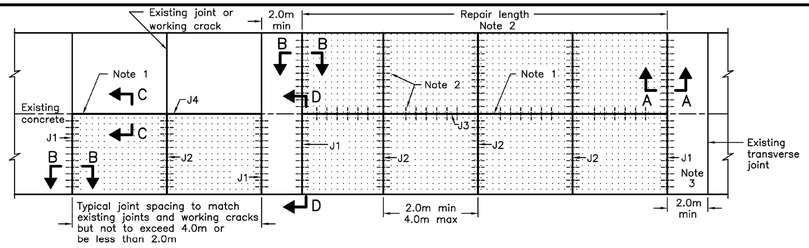
B All dimensions are in millimetres unless otherwise shown.

LEGEND:
T – Concrete slab thickness

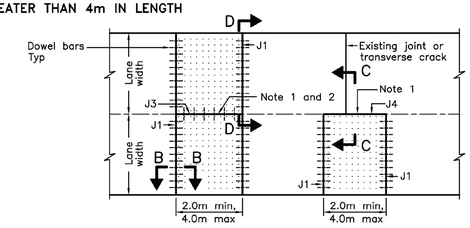


JOINT DETAILS
RESERVOIR CUT TYPE

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2017	Rev 2
CONCRETE PAVEMENT JOINT DETAILS		OPSD 552.010



PLAN VIEW
CONCRETE REPAIR GREATER THAN 4m IN LENGTH



PLAN VIEW
CONCRETE REPAIR 4m OR LESS IN LENGTH

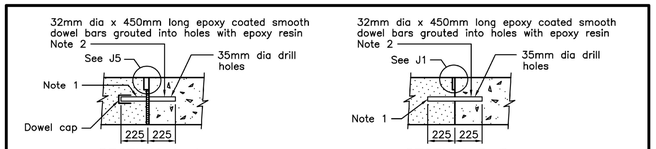
LEGEND:
New concrete

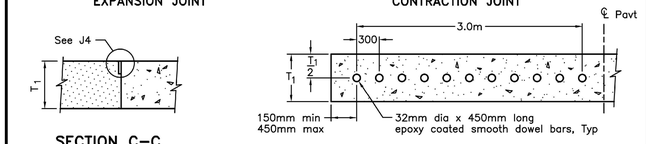
NOTES:
1 Tie bars are required at longitudinal joints except where the new concrete abuts existing concrete. Prior to placing new concrete, exposed longitudinal joints shall be treated with a bond breaker.
2 All dowel bar and tie bar sections shown for new concrete are according to OPSD 552.010 and 552.020.
3 Alternative J5 expansion joint when specified.

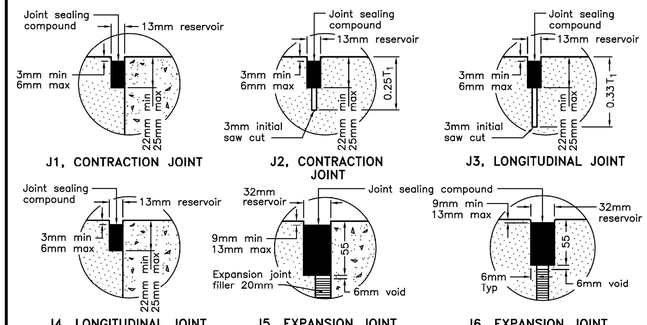
A This OPSD to be read in conjunction with OPSD 560.020 and 560.030.

B All dimensions are in millimetres unless otherwise shown.

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 6
COMPOSITE OR EXPOSED CONCRETE PAVEMENTS FULL DEPTH CONCRETE SLAB REPAIR LAYOUT		OPSD 560.010







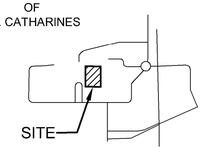
NOTES:
1 The free end of dowel bars shall be coated with an approved bond breaking material immediately prior to placing concrete.
2 The epoxy resin shall envelop the bar within the drill hole and shall be set prior to placing the concrete.

A Waxed building paper or equivalent bond breaker required at all joints.
B This standard to be read in conjunction with OPSD 560.010.
C Grout retention disks shall be used on all bars.
D All dimensions are in millimetres unless otherwise shown.

LEGEND:
New concrete
T_1 = Thickness of concrete

ONTARIO PROVINCIAL STANDARD DRAWING	Nov 2018	Rev 3
EXPOSED CONCRETE PAVEMENT FULL DEPTH CONCRETE SLAB REPAIR JOINT DETAILS		OPSD 560.020

CITY OF ST. CATHARINES



KEY PLAN N.T.S.

GEODETIC BM ELEV. = N/Am

SITE BENCHMARK ELEV. = N/Am

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No.	REVISION	BY	YYYY-MM-DD
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7.			
6.	ISSUED FOR TENDER	RDZ	2022-01-17
5.	ISSUED FOR 90% CD	RDZ	2021-12-07
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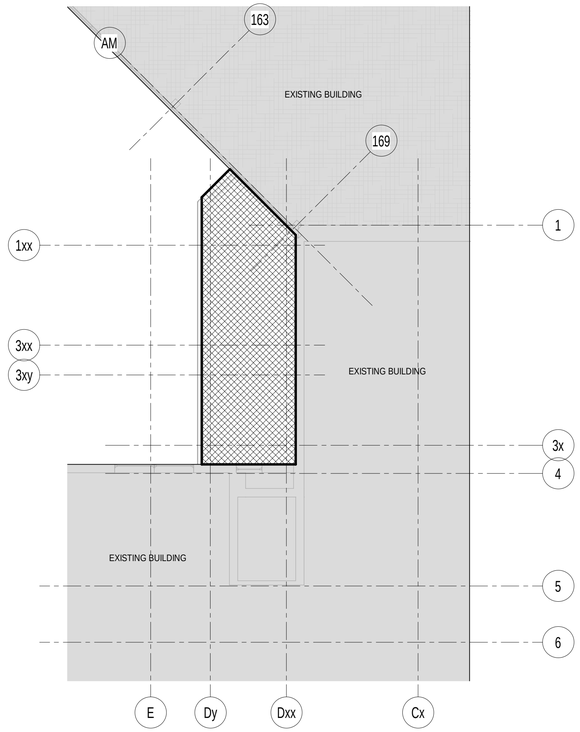
157 CATHARINE STREET N HAMILTON, ON

PROJECT
BROCK UNIVERSITY GOODMAN SCHOOL
MACKENZIE CHOWN BLOCK A RENOVATIONS
1812 SIR ISAAC BROCK WAY ST. CATHARINES, ON

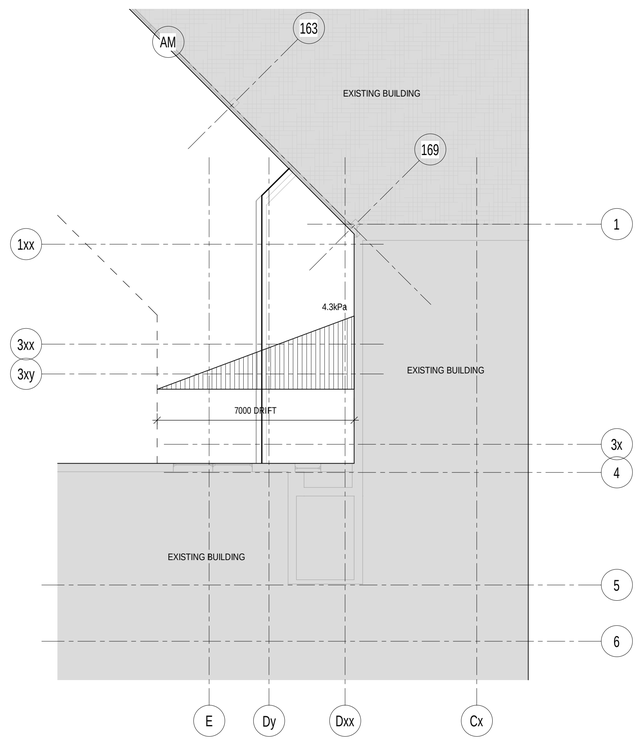
DRAWING
SITE DETAILS PLAN

Project Manager	R.ZHOU	Project No.	48031-200
Design By	RDZ	Checked By	KRR
Drawn By	LXQ	Checked By	RDZ
Surveyed By	OTHER	Drawing No.	C2.2
Date	Sep.23/21		
Scale	AS NOTED	Sheet 2 of 2	



LOADING PLAN

Scale: 1 : 100



SNOW DRIFT PLAN

Scale: 1 : 100

1. DRIFT LOADS SHOWN ARE IN ADDITION TO BASE SNOW LOAD OF 1.38KPA UNLESS NOTED OTHERWISE

UNFACTORED ROOF DESIGN LOAD (kPa)

ROOF AREA	SNOW	DEAD											TOTAL LOAD
	BASIC PLUS DRIFT SHOWN ON PLAN	BALLAST	INSULATION	MEMBRANE	GYPSUM BOARD	STEEL DECK	FRAMING	MECHANICAL ELECTRICAL	CEILING	SOFFIT		TOTAL	
LINK ROOF	1.38	0.60	0.10	0.10	0.15	0.10 (3A)	0.25	0.15	0.15	0.00		1.60	2.98

FOOTNOTES

3A) 38mm RD 938 STEEL ROOF DECK X 0.91 MM NCT MINIMUM

UNDERPINNING GENERAL NOTES

THE SUGGESTED PROCEDURE BELOW IS PROVIDED FOR THE GENERAL CONTRACTOR'S GUIDANCE ONLY AND IS GIVEN HERE IN GOOD FAITH, BASED ON THE INFORMATION AVAILABLE TO THE OWNER'S CONSULTANTS AT THE TIME THE CONSTRUCTION DOCUMENT WERE BEING PREPARED. PRIOR TO COMMENCING THE UNDER PINNING OPERATION:

A. THE GENERAL CONTRACTOR IS TO ESTABLISH THE IN SITU SOIL CONDITIONS AT AND BELOW THE EXISTING SLAB ON GRADE INDICATED ON THE DRAWINGS TO BE UNDERPINNED

B. THE GENERAL CONTRACTOR IS TO VERIFY THE UNDERSIDE ELEVATIONS OF EXISTING FOOTINGS, WITH PARTICULAR ATTENTION TO WHERE THE ELEVATIONS CHANGE, PRIOR TO PREPARING THE REQUIRED UNDERPINNING DETAILS AND PROCEDURES.

C. THE LATERAL AND VERTICAL STABILITY OF THE EXISTING AND NEW STRUCTURES ARE AT ALL TIMES THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

D. THE LATERAL STABILITY OF THE UNDERPINNING IS AT ALL TIMES THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

E. ALL CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE UNDERPINNING OPERATIONS ARE TO BE IN ACCORDANCE WITH ALL APPLICABLE CURRENT MUNICIPAL AND OR PROVINCIAL HEALTH AND SAFETY LEGISLATION, THE ONTARIO BUILDING CODE AND RELEVANT CANADIAN STANDARDS ASSOCIATION'S (CSA) STANDARDS.

F. BASED ON THE IN SITU SOIL CONDITIONS AS DISCUSSED ABOVE, THE GENERAL CONTRACTOR IS TO SUBMIT HIS DETAILED PROCEDURE FOR THE UNDERPINNING OPERATIONS. THE PROCEDURES ARE TO BE SEALED, SIGNED AND DATED BY A LICENSED PROFESSIONAL ENGINEER EITHER HOLDING A PEO CERTIFICATE OF AUTHORIZATION AND WITH CURRENT PUBLIC LIABILITY INSURANCE, OR A LICENSED PROFESSIONAL ENGINEER, IN THE EMPLOY OF A COMPANY, MEETING THE SAME REQUIREMENTS.

G. CONCRETE FOR UNDERPINNING TO BE 25MPa, 125 mm MAXIMUM SLUMP.

H. DRY PACK GROUT TO BE EITHER 1 PART PORTLAND CEMENT 2 PARTS CLEAN SHARP SAND OR PREMIXED NON-SHRINK GROUT MIX, SUCH AS 'V-3 GROUT' BY W.R. MEADOWS.

SUGGESTED PROCEDURE FOR UNDERPINNING - GENERAL

1. EXCAVATION AND UNDERPINNING SHALL BE DONE USING CAST IN PLACE UNDERPINNING BLOCK WITH:
   - MAXIMUM VERTICAL HEIGHT OF 750mm
   - MAXIMUM LENGTH OF 600mm
   - GROUT SPACE TO BE 75mm.
2. THIS PROCEDURE AND THE ACCOMPANYING PLANS HAVE BEEN PREPARED ON THE BASIS OF A FOUR STAGE UNDERPINNING PROCEDURE. EACH STAGE REQUIRES A MINIMUM OF 24 HOURS TO COMPLETE.
3. AT ANYTIME DURING THE INSTALLATION OF THE UNDERPINNING BLOCKS WHEN THE EXCAVATION RESULT IN A DIFFERENCE OF MORE THAN 750mm BETWEEN THE HEIGHT OF SOIL ON EITHER SIDE OF THE EXISTING FOUNDATION WALL, OR UNDERPINNING BLOCKS, LATERAL BRACING IS TO BE PROVIDED. THE LATERAL BRACING IS TO REMAIN IN PLACE UNTIL SUCH TIME THAT THE NEW CONSTRUCTION IS IN PLACE.

SUGGESTED FIRST LIFT OF UNDERPINNING

- **STAGE 1**
  - FOR ALL BLOCKS MARKED '1' ON THE DOCUMENTS, EXCAVATE TO UNDERSIDE OF EXISTING SLAB OR FOOTINGS OR AS NOTED ON ELEVATION. PROVIDE LATERAL BRACING AS REQUIRED. SEE NOTES ABOVE.
  - FOR ALL BLOCKS MARKED '1' ON THE DOCUMENTS, EXCAVATE 600mm LONG BY 750mm DEEP BY THE WIDTH OF THE UNDERPINNING BLOCK.
  - FORM EXPOSED FACE OF BLOCK AND POUR UNDERPINNING BLOCK, LEAVING MIMUMUM 75mm SPACE BETWEEN TOP OF BLOCK AND UNDERSIDE OF EXISTING SLAB OR FOOTING.
  - ALLOW CONCRETE TO CURE FOR 6 HOURS MINIMUM BEFORE PROCEEDING.
  - DRY PACK THE VOID BETWEEN THE TOP OF THE UNDERPINNING BLOCK USING THE PORTLAND CEMENT MIXTURE DESCRIBED ABOVE WITH SUFFICIENT POTABLE WATER TO PRODUCE A MATERIAL WITH A VERY STIFF CONSISTENCY. PLACE THE MIXTURE BY HAND AND THEN USING A RAM AND HAMMER PACK THE ENTIRE VOID SPACE.
  - AS AN ALTERNATE TO THE DRY PACK METHOD, PREPARE THE PREMIXED GROUT TO A POURABLE CONSISTENCY, FORM THE EXPOSED EDGE OF THE VOID BETWEEN THE TOP OF THE UNDERPINNING BLOCK AND THE UNDERSIDE OF THE EXISTING FOOTING AND POUR IN LIQUID GROUT FROM ONE END OF THE UNDERPINNING BLOCK, MAINTAINING A POSITIVE HEAD OF GROUT OF 3" MINIMUM.
  - ALLOW GROUT TO CURE FOR 18 HOURS BEFORE PROCEEDING.
- **STAGE 2, 3 AND 4**
  - FOR ALL BLOCKS MARKED '2' AND '3' ON THE DOCUMENTS, PROCEED AS PER STAGE 1

SUGGESTED SECOND LIFT OF UNDERPINNING

THE SECOND LIFT OF UNDERPINNING IS LOCATED BELOW THE FIRST LIFT, FOR BLOCKS NUMBERED 4, 5 AND 6, AS SHOWN ON THE PLANS AND OR SECTIONS, PROVIDE LATERAL SUPPORT FOR PREVIOUSLY COMPLETED UNDERPINNING AND EXISTING FOUNDATIONS. THE SECOND LIFT BLOCKS ARE TO BE STAGGERED BELOW THE FIRST LIFT BLOCKS. ENDS OF UNDERPINNING BLOCKS FOR SECOND LIFT SHALL ALIGN WITH THE CENTRE OF THE FIRST LIFT UNDERPINNING BLOCKS.

STAGE 4

- FOR ALL BLOCKS MARKED '4' ON THE DOCUMENTS, REPEAT THE PROCEDURE AS OUTLINED FOR FIRST LIFT, STAGE 1.

STAGE 5 AND 6

- FOR ALL BLOCKS MARKED '5' AND '6' ON THE DOCUMENTS, REPEAT THE PROCEDURE AS OUTLINED FOR FIRST LIFT, STAGE 1.

UNDERPINNING BELOW NEW COLUMN FOOTING ON GRID LINE 3XY-DY NOTES

THE SUGGESTED PROCEDURE BELOW IS PROVIDED FOR THE GENERAL CONTRACTOR'S GUIDANCE ONLY AND IS GIVEN HERE IN GOOD FAITH, BASED ON THE INFORMATION AVAILABLE TO THE OWNER'S CONSULTANTS AT THE TIME THE CONSTRUCTION DOCUMENT WERE BEING PREPARED. PRIOR TO COMMENCING THE UNDER PINNING OPERATION:

A. SEE UNDERPPINING GENERAL NOTES FOR ADDITIONAL NOTES AND REQUIREMENTS.

B. THE GENERAL CONTRACTOR IS TO VERIFY THE UNDERSIDE ELEVATIONS OF EXISTING FOOTINGS, WITH PARTICULAR ATTENTION TO WHERE THE ELEVATIONS CHANGE, PRIOR TO PREPARING THE REQUIRED UNDERPINNING DETAILS AND PROCEDURES.

C. THE LATERAL AND VERTICAL STABILITY OF THE EXISTING AND NEW STRUCTURES ARE AT ALL TIMES THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

D. BASED ON THE IN SITU SOIL CONDITIONS AS DISCUSSED ABOVE, THE GENERAL CONTRACTOR IS TO SUBMIT HIS DETAILED PROCEDURE FOR THE UNDERPINNING OPERATIONS. THE PROCEDURES ARE TO BE SEALED, SIGNED AND DATED BY A LICENSED PROFESSIONAL ENGINEER EITHER HOLDING A PEO CERTIFICATE OF AUTHORIZATION AND WITH CURRENT PUBLIC LIABILITY INSURANCE, OR A LICENSED PROFESSIONAL ENGINEER, IN THE EMPLOY OF A COMPANY, MEETING THE SAME REQUIREMENTS.

E. CONCRETE FOR UNDERPINNING TO BE 25MPa, 125 mm MAXIMUM SLUMP.

SUGGESTED PROCEDURE FOR UNDERPINNING NEW COLUMN FOOTING- GENERAL

1. EXCAVATION AND UNDERPINNING SHALL BE DONE USING CAST IN PLACE BLOCKS WITH:
   A. MAXIMUM VERTICAL HEIGHT OF 5000mm
   B. MAXIMUM WIDTH OF 600mm
2. EXCAVATE TO UNDERISDE OF ADJACENT EXISTING FOOTING ASSUMED TO BE AT ELEVATION 172.95'. DO NOT EXCAVATE BELOW UNDERSIDE OF EXISTING FOOTINGS.
3. THIS PROCEDURE AND THE ACCOMPANYING PLANS HAVE BEEN PREPARED ON THE BASIS OF A FOUR STAGE UNDERPINNING PROCEDURE. EACH STAGE REQUIRES A MINIMUM OF 24 HOURS TO COMPLETE.

SUGGESTED FIRST LIFT OF UNDERPINNING

STAGE 1

- FOR ALL BLOCKS MARKED '1' ON THE DOCUMENTS, EXCAVATE TO UNDERSIDE OF NEW UNDERPINNG BLOCK ELEVATION OF 172.45' UNLESS NOTED OTHERWISE ON PLAN. PROVIDE LATERAL BRACING AS REQUIRED. SEE NOTES ABOVE.
- BLOCKS TO EXTEND A MINIMUM OF 100MM EACH SIDE OF THE SUPPORTED COLUMN ABOVE.
- BLOCKS TO BE MAXIMUM 600MM WIDE AND LENGTH TO BE 100mm LONGER THAN WIDTH OF SUPPOTED COLUMN FOOTING ABOVE.
- FORM EXPOSED FACE OF BLOCK AND POUR UNDERPINNING BLOCK
- ALLOW CONCRETE TO CURE FOR 24 HOURS MINIMUM BEFORE PROCEEDING.

STAGE 2, 3 AND 4

- FOR ALL BLOCKS MARKED '2', '3' AND '4' ON THE DOCUMENTS, PROCEED AS PER STAGE 1

STRUCTURAL INFORMATION

1. DESCRIPTION

BUILDING AREA: SEE ARCH., BUILDING HEIGHT: SEE ARCH., BASEMENT: NO.

STRUCTURAL LATERAL LOAD RESTRAINING SYSTEM:
EXISTING CONVENTIONAL STEEL BRACED FRAMES

2. DESIGN STANDARDS

ONTARIO BUILDING CODE 2012, PART 4 (OBC)

STRUCTURAL COMMENTARIES ON THE NATIONAL BUILDING CODE OF CANADA 2015 (NBC)

CSA A371-14	"MASONRY CONSTRUCTION FOR BUILDINGS"
CSA S304.1-14	"MASONRY DESIGN FOR BUILDINGS (LIMIT STATES DESIGN)"
CAN/CSA-A23.3-14	"DESIGN OF CONCRETE STRUCTURES"
CSA A23.2	"TEST METHODS AND STANDARD PRACTICES FOR CONCRETE"
CSA A3000	"CEMENTITIOUS MATERIALS COMPENDIUM"
CAN/CSA A23.1-14	"CONCRETE MATERIALS & METHODS OF CONCRETE CONSTRUCTION"
CSA CAN/CSA-S136-12	"COLD FORMED STEEL STRUCTURAL MEMBERS"
CSA Z91-M90	"SAFETY CODE FOR WINDOWS CLEANING OPERATIONS"
CAN/CSA-S16-14	"LIMIT STATES DESIGN OF STEEL STRUCTURES" CISC CODE OF STANDARD PRACTICE, 7th EDITION.
CAN/CGSB-12.20-M89	"STRUCTURAL DESIGN OF GLASS FOR BUILDINGS"
CSA S478	"GUIDELINE ON DURABILITY IN BUILDINGS"
ACI 117	"SPECIFICATIONS FOR TOLERANCES FOR CONCRETE CONSTRUCTION MATERIALS" CANADIAN FOUNDATION MANUAL

3. LOADS

BUILDING IMPORTANCE CATEGORY NORMAL .

a) DEAD LOADS - SEE LOAD TABLES ON DRAWING S101

b) LIVE LOADS - SEE LOAD TABLES ON DRAWING S101.

c) LIVE LOADS DUE TO SNOW, ICE AND RAIN

GROUND SNOW LOAD (Ss)	1.0 kPa	PROBABILITY 1/50
GROUND RAIN LOAD (Sr)	0.4 kPa	PROBABILITY 1/50
IMPORTANCE FACTOR (IS)	1.0	

DRIFT LOAD VARIES SEE PLAN

SNOW DISTRIBUTION AND SNOW LOADING FACTORS APPLIED AS PER OBC AND NBC FIG. 4.1.6.5 A, B
ARE THE ROOF DRAINS DESIGNED TO RETAIN WATER FOR STORM WATER MANAGEMENT? YES ☐ NO■
- (AS PER OBC 4.1.6.4(3) FOR A MAXIMUM DEPTH OF 150mm AND DRAINED WITHIN 24 HOURS).

d) LIVE LOADS DUE TO WIND

HOURLY WIND PRESSURE FOR STRUCTURAL COMPONENTS 0.46 kPa PROBABILITY 1/50
HOURLY WIND PRESSURE FOR CLADDING 0.46 kPa PROBABILITY 1/50
IMPORTANCE FACTOR, Iw 1.0
WIND LOAD APPLIED AS PER OBC AND NBC FIG. ' 4.1.7.6 - A, B, C

e) FULL AND PARTIAL LOADINGS

APPLIED AS PER OBC AND NBC

f) LIVE LOAD FACTOR

IF LIMIT STATES DESIGN USED 1.5

g) LIVE LOADS DUE TO EARTHQUAKES

Sa(0.2)=	0.319	F(0.2)=	1.08
Sa(0.5)=	0.155	F(0.5)=	1.29
Sa(1.0)=	0.071	F(1.0)=	1.38
Sa(2.0)=	0.032	F(2.0)=	1.73
Sa(5.0)=	0.0076	F(5.0)=	1.47
Sa(10.0)=	0.0028	F(10.0)=	1.41
PGA=	0.206	F(PGA)=	1.09
PGV=	0.121	F(PGV)=	1.29

IMPORTANCE FACTOR, Ie = 1.0 Rd = 1.5
SITE CLASSIFICATION: SITE CLASS D (ASSUMED) Ro = 1.3
Mv = 1.0
IeFaSa(0.2) = 0.34 Ta = 0.39

h) SUMMARY OF LATERAL FORCES

	BUILDING	MAIN	
	DIRECTION	N/S	E/W
WIND	V (kN)	N/A	19kN
SEISMIC	V (kN)	18kN	

NOTE: LOADS IN TABLE ARE SPECIFIED (UNFACTORED) LOADS AND INCLUDE IMPORTANCE FACTORS I_E AND I_W SHOWN ABOVE

i) OTHER EFFECTS

APPLIED AS PER SUBSECTION 4.1.5.14 to 4.1.5.17 OF OBC.

j) LIMIT STATES DESIGN

SAFETY CHECK FOR STRENGTH AND STABILITY AS PER OBC 4.1.3.2.
SERVICEABILITY AND FATIGUE AS PER OBC 4.1.3.3 to 4.1.3.6.

4. FOUNDATION SYSTEM

DESCRIPTION: CONVENTIONAL SPREAD AND CONTINUOUS FOOTINGS ON UNDISTURBED NATIVE SUBGRADE

SERVICABILITY SOIL BEARING PRESSURE (SLS): 200 kPa

ULTIMATE SOIL BEARING PRESSURE (ULS): 300 kPa

RETAINING STRUCTURES: p = k(γ h + q) =### (## kN/m^3 x h(m) +q) = VARIES kPa

GEOTECHNICAL INVESTIGATION BY: SEE FOUNDATION PLAN NOTES FOR DETAILS

MOVEMENT OF CONSTRUCTION MATERIAL

1. THE CONTRACTOR'S ATTENTION IS DRAWN TO THE PRESENCE OF AN EXISTING SERVICE TUNNEL ADJACENT TO THE AREA OF THE NEW LINK ADDITION. THE ROOF OF THE EXISTING TUNNEL IS NOT TO BE USED FOR THE STORAGE OF MATERIALS OR A SETUP LOCATION OF MOBILE CRAWLER OR WHEELED CRANES.
2. MOVEMENT OF CONSTRUCTION MATERIAL OVER THE EXISTING SERVICE TUNNEL SHALL BE LIMITED TO A MEANS THAT DOES NOT PRODUCE A LOAD GREATER THAN 100 PSF (4.8KPa). WHERE LOADS EXCEED THIS THE GENERAL CONTRACTOR IS TO SUBMIT THEIR PROFESSIONAL ENGINEERS WRITTEN REVIEW AND PROCEDURE FOR SHORING IF REQUIRED FOR THE EXISTING SERVICE TUNNEL ROOF.
3. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO ENSURE THE SAFETY OF THE WORKERS AND PREVENT DAMAGE TO THE STRUCTURAL COMPONENTS OF THE BUILDING DURING MOVEMENT AND STORAGE OF MATERIALS.

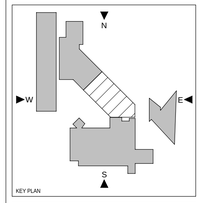
DRAWING LIST1

Sheet Number	Sheet Name
S101	STRUCTURAL DATA
S102	STANDARD DETAILS
S103	STANDARD DETAILS
S104	STANDARD DETAILS
S201	LEVEL 2 FOUNDATION PLAN
S202	LEVEL 3 FRAMING PLAN
S301	SECTIONS
S401	SCHEDULES

Brock University

PROJECT LOGO

TRUE NORTH CONSTRUCTION NORTH



KEY PLAN

No.	DESCRIPTION	DATE
8	ISSUED FOR TENDER	2022-01-17
7	ISSUED FOR 90% CONSTRUCTION DOCUMENTS	2021-12-09
6	ISSUED FOR PERMIT	2021-11-23
5	ISSUED FOR 75% CONSTRUCTION DOCUMENTS	2021-11-23
4	ISSUED FOR 50% CONSTRUCTION DOCUMENTS	2021-10-07
3	ISSUED FOR 25% CONSTRUCTION DOCUMENTS	2021-09-30

REVISIONS

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT BEFORE PROCEEDING.
ONLY FIGURED DIMENSIONS MUST BE USED.
THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.

DO NOT SCALE THE DRAWINGS.

MTE
Engineers, Scientists, Surveyors
519-204-6510

SEAL

CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
STRUCTURAL DATA

DRAWN BY: Author	DATE: 09/26/18
CHECKED BY: Checker	SCALE: As indicated

PROJECT NO.: 48031-100 (20050)

DRAWING NO.: **S101**

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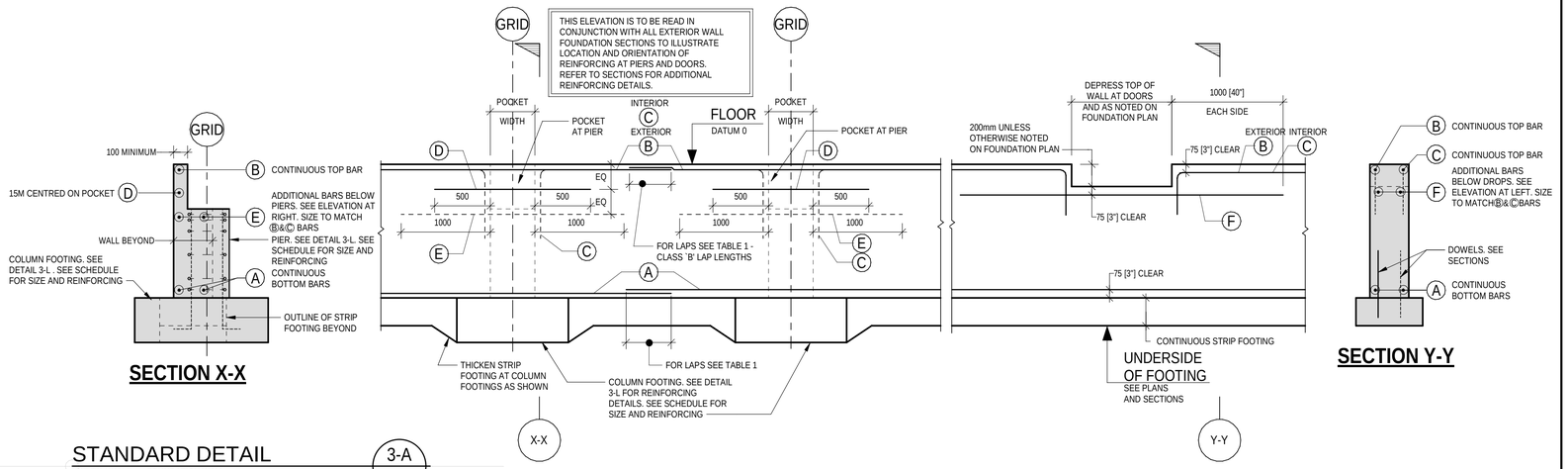
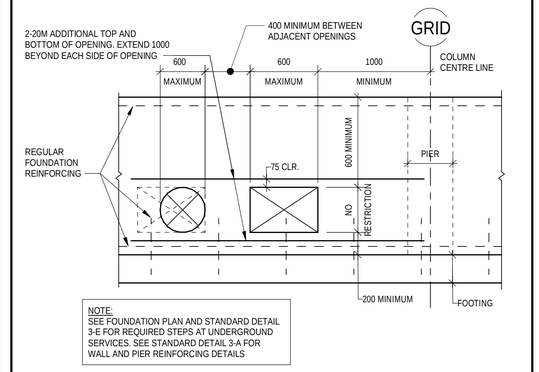


STANDARD DETAIL 3-A

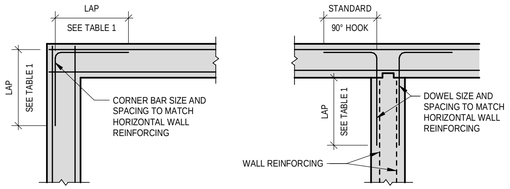
NOT TO SCALE **FOUNDATION WALL - HORIZONTAL REINFORCING**



NOTE:
SEE FOUNDATION PLAN AND STANDARD DETAIL 3-E FOR REQUIRED STEPS AT UNDERGROUND SERVICES. SEE STANDARD DETAIL 3-A FOR WALL AND PIER REINFORCING DETAILS

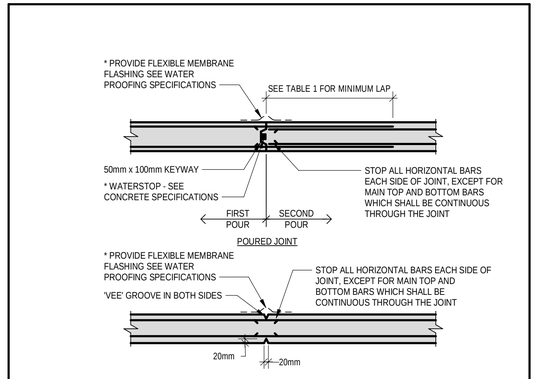
STANDARD DETAIL 3-B

NOT TO SCALE **FOUNDATION WALL - ADDITIONAL REINFORCING AT OPENINGS**



STANDARD DETAIL 3-C

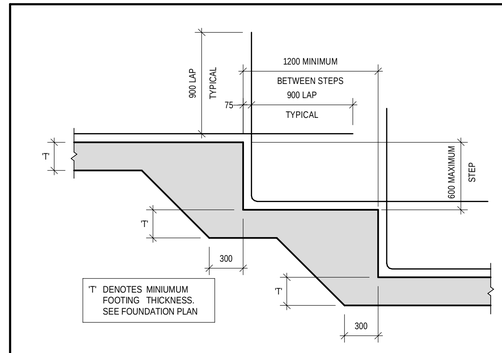
NOT TO SCALE **FOUNDATION WALL - CORNER REINFORCING DETAILS**



NOTES:
- '*' DENOTES ADDITIONAL PROVISIONS WHERE THE WALL IS BACKFILLED ON ONE SIDE ONLY SUCH AS BASEMENT OR RETAINING WALLS.
- USE ONE OR THE OTHER DETAIL AS THE CONTROL JOINT WHERE DENOTED 'WCJ' ON PLAN.

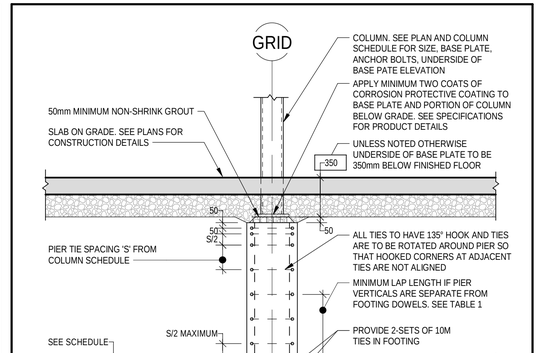
STANDARD DETAIL 3-D

NOT TO SCALE **FOUNDATION WALL - 'WCJ' - WALL CONTROL JOINTS**



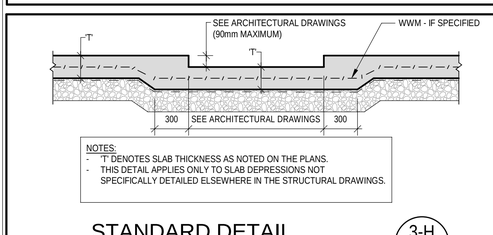
STANDARD DETAIL 3-E

NOT TO SCALE **FOOTING - 'SF' - STEP FOOTING**



STANDARD DETAIL 3-L

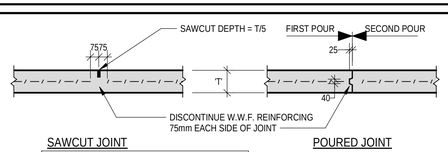
NOT TO SCALE **FOOTING - INTERIOR PIER AND FOOTING REINFORCING**



NOTES:
- 'T' DENOTES SLAB THICKNESS AS NOTED ON THE PLANS.
- THIS DETAIL APPLIES ONLY TO SLAB DEPRESSIONS NOT SPECIFICALLY DETAILED ELSEWHERE IN THE STRUCTURAL DRAWINGS.

STANDARD DETAIL 3-H

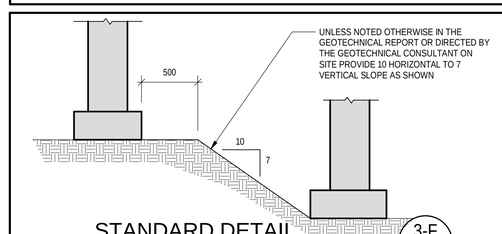
NOT TO SCALE **SLAB ON GRADE - DEPRESSION**



NOTE:
USE ONE OR THE OTHERE DETAIL AS THE CONTROL JOINT WHERE DENOTED 'CJ' ON PLAN

STANDARD DETAIL 3-G

NOT TO SCALE **SLAB ON GRADE - 'CJ' CONTROL JOINTS**



STANDARD DETAIL 3-F

NOT TO SCALE **FOOTING - MINIMUM SPACING FOR DIFFERENT ELEVATIONS**

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Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
8	ISSUED FOR TENDER	2022-01-17
7	ISSUED FOR 90% CONSTRUCTION DOCUMENTS	2021-12-09
6	ISSUED FOR PERMIT	2021-11-23
5	ISSUED FOR 75% CONSTRUCTION DOCUMENTS	2021-11-23
4	ISSUED FOR 50% CONSTRUCTION DOCUMENTS	2021-10-07
3	ISSUED FOR 25% CONSTRUCTION DOCUMENTS	2021-09-30
2	Issued for Design Development	2020-07-22

REVISIONS

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ARCHITECT BEFORE PROCEEDING.
ONLY FIGURED DIMENSIONS MUST BE USED.
THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.

DO NOT SCALE THE DRAWINGS.

MTE
Engineers, Scientists, Surveyors
519-204-6510

SEAL

CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
STANDARD DETAILS

DRAWN BY:	DATE:
Author	08/27/18
CHECKED BY:	SCALE:
Checker	As indicated

PROJECT NO.: 48031-100 (20050)

DRAWING NO.: **S102**

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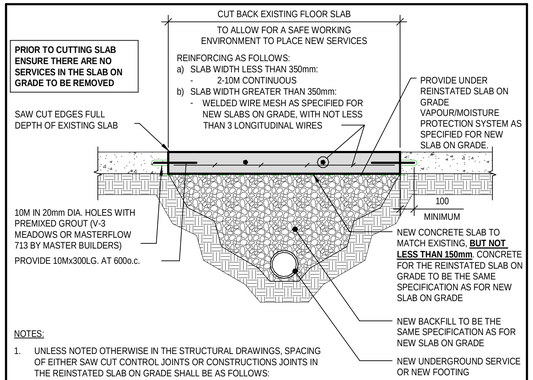
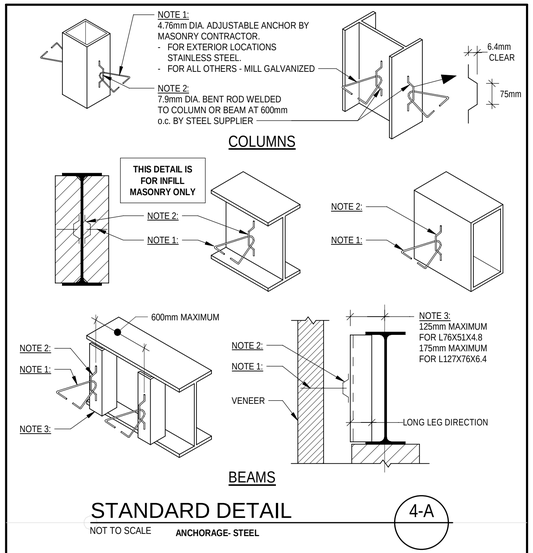


NOTES:

1. UNLESS NOTED OTHERWISE IN THE STRUCTURAL DRAWINGS, SPACING OF EITHER SAW CUT CONTROL JOINTS OR CONSTRUCTIONS JOINTS IN THE REINSTATED SLAB ON GRADE SHALL BE AS FOLLOWS:
   - FOR WIDTHS LESS THAN 350MM AT 900 ON CENTRE ALONG LENGTH OF SLAB.
   - FOR WIDTHS GREATER THAN 350 AND LESS THAN 1800 AT 1200 ON CENTRE LENGTH OF SLAB.
   - FOR WIDTHS GREATER 1800 LONGITUDINAL AND TRANSVERSE CONTROL JOINTS WITH SPACING NOT TO EXCEED 1200 ON CENTRE.
2. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR LOCATION OF NEW BURIED SERVICES

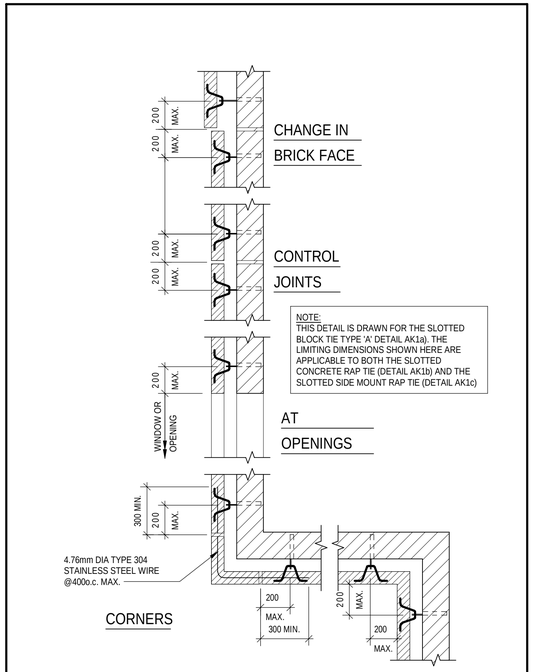
STANDARD DETAIL 3-M

NOT TO SCALE **SLAB ON GRADE - REPAIR DETAIL**



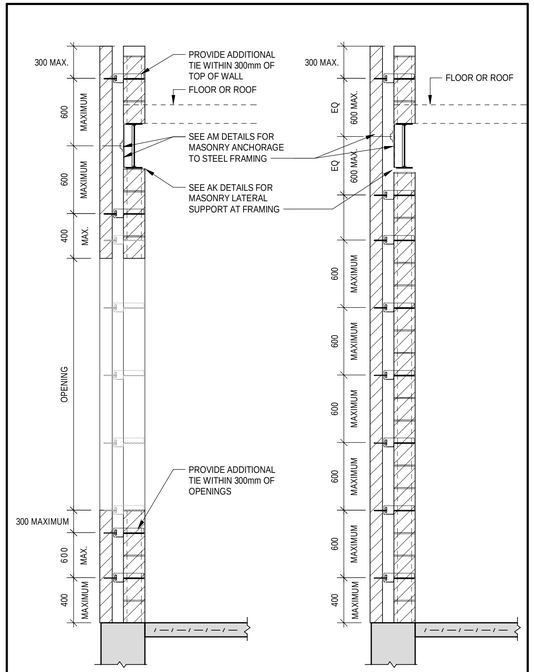
STANDARD DETAIL 4-A

NOT TO SCALE **ANCHORAGE- STEEL**



STANDARD DETAIL 4-M

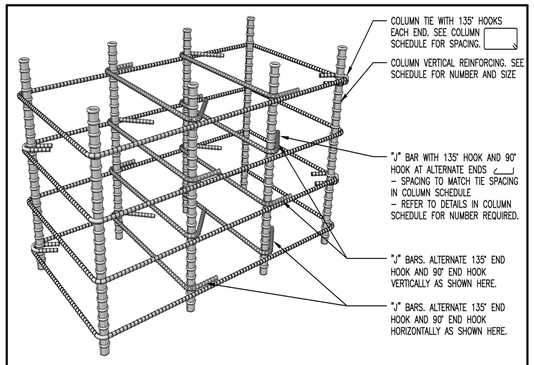
NOT TO SCALE **TIE - HORIZONTAL SPACING REQUIREMENTS**



NOTES:
- ALL REINFORCING WHICH CROSSES CAVITY AND IN EXTERIOR WYTHE TO BE STAINLESS STEEL.
- LAP CONTINUOUS REINFORCING 200mm MINIMUM AT SPLICES (300mm FOR PLAIN WIRE).
- USE PREFABRICATED CORNERS AND TIES FOR CONTINUOUS REINFORCING.

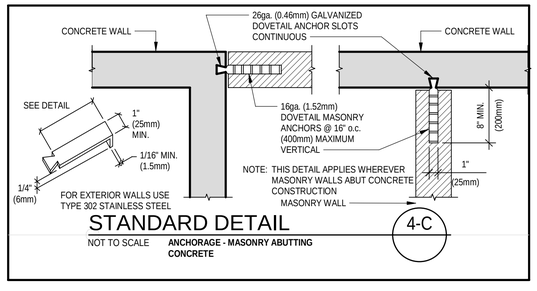
STANDARD DETAIL 4-N

NOT TO SCALE **TIES - VERITCAL SPACING REQUIREMNTS**



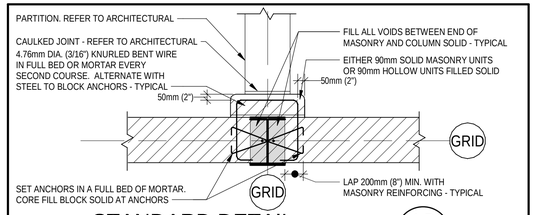
STANDARD DETAIL 3-X

NOT TO SCALE **COLUMN REINFORCING LAYOUT**



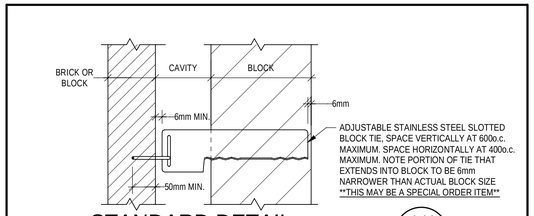
STANDARD DETAIL 4-C

NOT TO SCALE **ANCHORAGE - MASONRY ABUTTING CONCRETE**



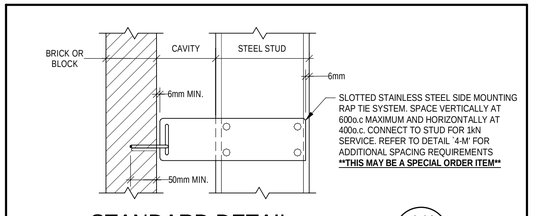
STANDARD DETAIL 4-D

NOT TO SCALE **FIREPROOFING - EXTERIOR COLUMN**



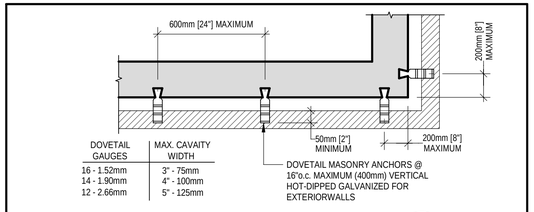
STANDARD DETAIL 4-H

NOT TO SCALE **TIE - TYPE "A"**



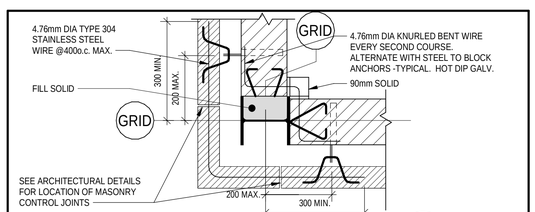
STANDARD DETAIL 4-K

NOT TO SCALE **TIE - TYPE 'C'**



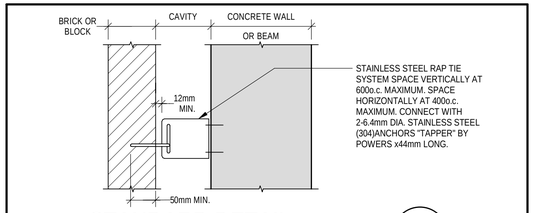
STANDARD DETAIL 4-B

NOT TO SCALE **ANCHORAGE - VENEER TO CONCRETE**



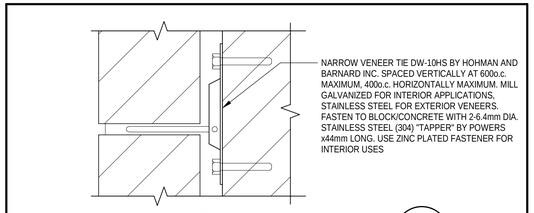
STANDARD DETAIL 4-E

NOT TO SCALE **FIREPROOFING - EXTERIOR CORNER COLUMN**



STANDARD DETAIL 4-J

NOT TO SCALE **TIE - TYPE 'B'**



STANDARD DETAIL 4-L

NOT TO SCALE **TIE - TYPE 'D'**

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PROJECT LOGO

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KEY PLAN

No.	DESCRIPTION	DATE
8	ISSUED FOR TENDER	2022-01-17
7	ISSUED FOR 90% CONSTRUCTION DOCUMENTS	2021-12-09
6	ISSUED FOR PERMIT	2021-11-23
5	ISSUED FOR 75% CONSTRUCTION DOCUMENTS	2021-11-23
4	ISSUED FOR 50% CONSTRUCTION DOCUMENTS	2021-10-07
3	ISSUED FOR 25% CONSTRUCTION DOCUMENTS	2021-09-30
2	Issued for Design Development	2020-07-22

REVISIONS

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DO NOT SCALE THE DRAWINGS.

MTE
Engineers, Scientists, Surveyors
519-204-6510

SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

STANDARD DETAILS

DRAWN BY: Author	DATE: 09/14/18
CHECKED BY: Checker	SCALE: As indicated

PROJECT NO.: 48031-100 (20050)

DRAWING NO.: **S103**

FILENAME: C:\Users\AMatthews\Documents\48031-100_MAC RENO-S-v21_AMatthewsCVLWT.rvt
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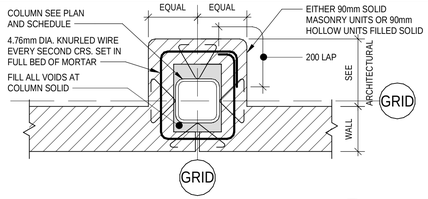
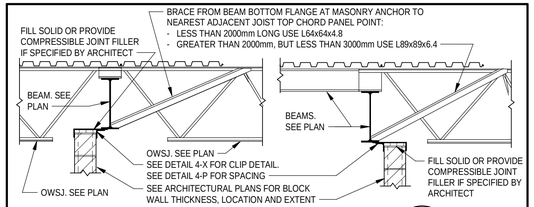


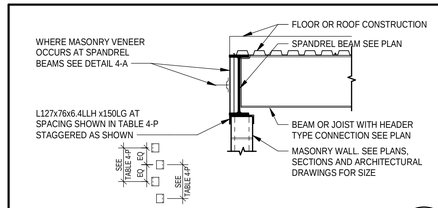
STANDARD DETAIL 4-F

NOT TO SCALE **FIREPROOFING - CORRIDOR COLUMN**



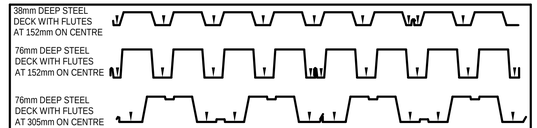
STANDARD DETAIL 4-S

NOT TO SCALE **LATERAL SUPPORT - OFFSET AT INTERIOR BEAM WITH BRACE**



STANDARD DETAIL 4-Y

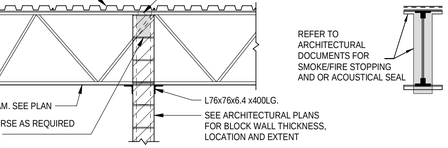
NOT TO SCALE **LATERAL SUPPORT - SPANDREL BEAM**



1. 20mmØ PUDDLE WELDS DENOTED THUS ⬆ ;
2. PROVIDE WELDS SHOWN AT ENDS OF ALL SHEETS AND AT ALL INTERMEDIATE SUPPORTS.
3. CLINCH SIDE LAPS @ 300 o.c. MAXIMUM.
4. PERIMETER WELDS AT 450 o.c. MAXIMUM.
5. PROVIDE TWO #14 AB SELF TAPING SCREWS AT EACH WELD LOCATION NOTED ABOVE FOR MECHANICAL FASTENED ROOF DECK AS NOTED ON PLAN.

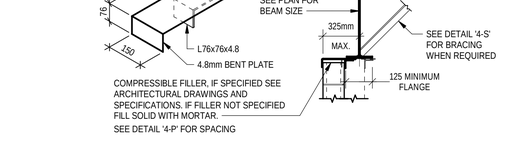
STANDARD DETAIL 5-A

NOT TO SCALE **STEEL DECK - WELDING REQUIREMENTS**



STANDARD DETAIL 4-G

NOT TO SCALE **WALL PROTECTION - REINFORCING**



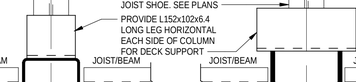
STANDARD DETAIL 4-T

NOT TO SCALE **LATERAL SUPPORT - OFFSET AT INTERIOR BEAM NO BRACE**

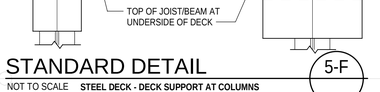
STANDARD DETAIL 4-Z

NOT TO SCALE **LATERAL SUPPORT - SPANDREL BEAM WITH OPEN WEB STEEL JOIST**

1. ALL OPENINGS LARGER THAN 200mm TO BE FRAMED AS SHOWN BELOW OR AS DETAILED ON DRAWINGS.
2. OPENINGS FROM 200mm TO 350mm TO BE FRAMED WITH L-64x64x6.4 TWO SIDES OF OPENING AND WELDED OR BOLTED TO STEEL DECK. SEE DETAIL BELOW.



3. WHERE DECK SUPPORTS ARE NOT SPACED OVER 1500 o.c. OPENINGS LARGER LARGER THAN 350 TO BE FRAMED WITH L's 89x89x6.4 ALL AROUND OPENING AND CONNECTED TO O.W.S.J.. SEE DETAIL BELOW.



4. WHERE DECK SUPPORTS ARE SPACED OVER 1500 o.c. OPENINGS LARGER THAN 350 TO BE FRAMED WITH L's 89x89x6.4 ALL AROUND OPENINGS AND CONNECTED TO C150x12 PURLINS. SEE DETAIL BELOW.

NOTE:
SEE MECHANICAL DRAWINGS FOR LOCATION, SIZE AND WEIGHT OF ALL ROOF MOUNTED OR SUPPORTED EQUIPMENT.

STANDARD DETAIL 5-B

NOT TO SCALE **STEEL DECK - OPENINGS THROUGH ROOF DECK**

TABLE 4-P	
MASONRY WYTHE THICKNESS	MAXIMUM SPACING OF LATERAL SUPPORT
90mm	900mm
140mm	1400mm
190mm & THICKER	1800mm

STANDARD DETAIL 4-P

NOT TO SCALE **LATERAL SUPPORT - BELOW OPEN WEB STEEL JOIST**

STANDARD DETAIL 4-U

NOT TO SCALE **LATERAL SUPORT - WALL PERPENDICULAR TO DECK FLUTE**

STANDARD DETAIL 4-AA

NOT TO SCALE **LATERAL SUPPORT - SPANDREL BEAM WITH BRACE**

STANDARD DETAIL 4-Q

NOT TO SCALE **LATERAL SUPPORT - PARALLEL TO OPEN WEB STEEL JOIST**

STANDARD DETAIL 4-V

NOT TO SCALE **LATERAL SUPPORT - WALL PARALLEL TO DECK FLUTE**

STANDARD DETAIL 4-AC

NOT TO SCALE **LATERAL SUPPORT - CONCEALED**

STANDARD DETAIL 5-C

NOT TO SCALE **STEEL DECK - SUPPORT AT CHANGE IN DECK SPAN DIRECTION AT ROOF**

STANDARD DETAIL 4-R

NOT TO SCALE **LATERAL SUPPORT - PERPENDICULAR TO OPEN WEB STEEL JOIST**

STANDARD DETAIL 4-X

NOT TO SCALE **LATERAL SUPPORT - OFFSET CONNECTION DETAILS**

STANDARD DETAIL 5-F

NOT TO SCALE **STEEL DECK - DECK SUPPORT AT COLUMNS**

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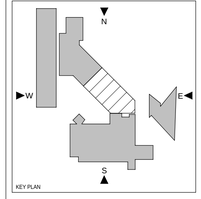

KEY PLAN

No.	DESCRIPTION	DATE
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REVISIONS

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SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

STANDARD DETAILS

DRAWN BY: Author	DATE: 07/22/21
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PROJECT NO.: 48031-100 (20050)

DRAWING NO.: **S104**

FILENAME: C:\Users\AMatthews\OneDrive\Documents\48031-100_MAC-REVIZ-S-v21_AMatthewsCh.VWT.rvt
PLOTTED: 11/7/2022 2:57:17 PM

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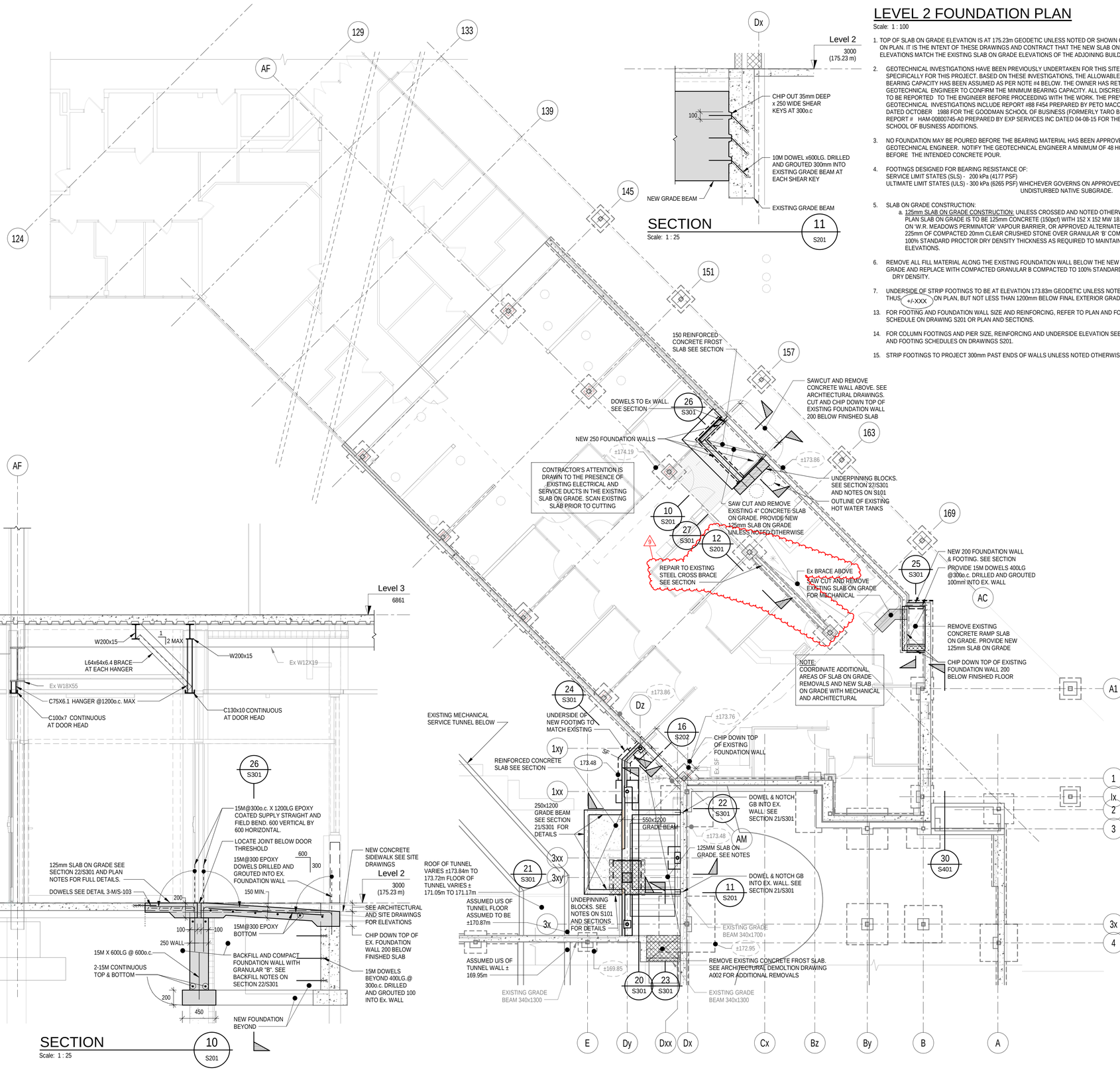
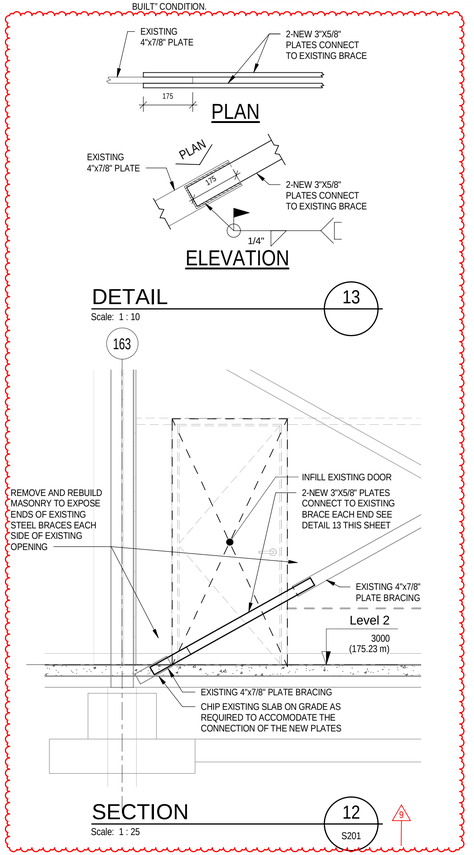
LEVEL 2 FOUNDATION PLAN

Scale: 1 : 100

1. TOP OF SLAB ON GRADE ELEVATION IS AT 175.23m GEODETIC UNLESS NOTED OR SHOWN OTHERWISE ON PLAN. IT IS THE INTENT OF THESE DRAWINGS AND CONTRACT THAT THE NEW SLAB ON GRADE ELEVATIONS MATCH THE EXISTING SLAB ON GRADE ELEVATIONS OF THE ADJOINING BUILDING.
2. GEOTECHNICAL INVESTIGATIONS HAVE BEEN PREVIOUSLY UNDERTAKEN FOR THIS SITE BUT NO SPECIFICALLY FOR THIS PROJECT. BASED ON THESE INVESTIGATIONS, THE ALLOWABLE SOIL BEARING CAPACITY HAS BEEN ASSUMED AS PER NOTE #4 BELOW. THE OWNER HAS RETAINED A GEOTECHNICAL ENGINEER TO CONFIRM THE MINIMUM BEARING CAPACITY. ALL DISCREPANCIES ARE TO BE REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK. THE PREVIOUS GEOTECHNICAL INVESTIGATIONS INCLUDE REPORT #88 F454 PREPARED BY PETO MACCALLUM LTD DATED OCTOBER 1988 FOR THE GOODMAN SCHOOL OF BUSINESS (FORMERLY TARO BUILDING) AND REPORT # HAM-00800745-A0 PREPARED BY EXP SERVICES INC DATED 04-08-15 FOR THE GOODMAN SCHOOL OF BUSINESS ADDITIONS.
3. NO FOUNDATION MAY BE POURED BEFORE THE BEARING MATERIAL HAS BEEN APPROVED BY THE GEOTECHNICAL ENGINEER. NOTIFY THE GEOTECHNICAL ENGINEER A MINIMUM OF 48 HOURS BEFORE THE INTENDED CONCRETE POUR.
4. FOOTINGS DESIGNED FOR BEARING RESISTANCE OF:
   SERVICE LIMIT STATES (SLS) - 200 kPa (4177 PSF)
   ULTIMATE LIMIT STATES (ULS) - 300 kPa (6265 PSF) WHICHEVER GOVERNS ON APPROVED UNDISTURBED NATIVE SUBGRADE.
5. SLAB ON GRADE CONSTRUCTION:
   a. 125mm SLAB ON GRADE CONSTRUCTION: UNLESS CROSSED AND NOTED OTHERWISE ON PLAN SLAB ON GRADE IS TO BE 125mm CONCRETE (150pcf) WITH 152 X 152 MW 18.7 X MW 18.7 ON W.R. MEADOWS PERMINATOR 'VAPOUR BARRIER, OR APPROVED ALTERNATE OVER 225mm OF COMPACTED 20mm CLEAR CRUSHED STONE OVER GRANULAR 'B' COMPACTED TO 100% STANDARD PROCTOR DRY DENSITY THICKNESS AS REQUIRED TO MAINTAIN ELEVATIONS.
6. REMOVE ALL FILL MATERIAL ALONG THE EXISTING FOUNDATION WALL BELOW THE NEW SLAB ON GRADE AND REPLACE WITH COMPACTED GRANULAR B COMPACTED TO 100% STANDARD PROCTOR DRY DENSITY.
7. UNDERSIDE OF STRIP FOOTINGS TO BE AT ELEVATION 173.83m GEODETIC UNLESS NOTED DENOTED THUS +/-XXX ON PLAN, BUT NOT LESS THAN 1200mm BELOW FINAL EXTERIOR GRADE.
13. FOR FOOTING AND FOUNDATION WALL SIZE AND REINFORCING, REFER TO PLAN AND FOUNDATION SCHEDULE ON DRAWING S201 OR PLAN AND SECTIONS.
14. FOR COLUMN FOOTINGS AND PIER SIZE, REINFORCING AND UNDERSIDE ELEVATION SEE COLUMN AND FOOTING SCHEDULES ON DRAWINGS S201.
15. STRIP FOOTINGS TO PROJECT 300mm PAST ENDS OF WALLS UNLESS NOTED OTHERWISE.
16. STRIP FOOTING MINIMUM WIDTH 200mm EACH SIDE OF WALL OR PIER, MINIMUM FOOTING THICKNESS TO BE 250mm.
17. DEPRESS TOP OF FOUNDATION WALL 200mm AT ALL EXTERIOR DOOR OPENINGS. HOOK TOP BARS DOWN 800mm EACH SIDE OF OPENING. PROVIDE 2-20M HORIZONTAL BARS BELOW DOOR OPENING. SEE SECTIONS FOR ADDITIONAL REINFORCING DETAILS.
18. ALL INTERIOR WALLS AND WALLS SHOWN UNSHADED TO BE DEPRESSED 200mm OR AS SHOWN IN SECTION.
19. PROVIDE DOWELS FROM FOOTINGS TO WALLS AS NOTED IN SCHEDULES OR SHOWN IN SECTIONS.
20. CO-ORDINATE LOCATION OF SLAB ON GRADE CONSTRUCTION AND SAW CUT CONTROL JOINTS WITH ARCHITECTURAL FLOOR FINISHES AND ARCHITECTURAL FLOOR CONTROL JOINTS.
21. REFER TO ARCHITECTURAL MECHANICAL AND ELECTRICAL DRAWINGS FOR FLOOR DEPRESSIONS, SLOPES TO FLOOR DRAINS OR ELECTRICAL DEVICES LOCATED IN SLABS ON GRADE. MAINTAIN SPECIFIED SLAB THICKNESS AT ALL FLOOR DEPRESSIONS, SLOPES AND BELOW ALL RECESSED DEVICES.
22. ELECTRICAL CONDUIT IS TO BE BURIED IN THE COMPACTED GRANULAR 'A', BELOW THE VAPOUR BARRIER. DO NOT RUN CONDUITS IN THE CONCRETE.
23. GENERAL CONTRACTOR TO CO-ORDINATE WITH ALL TRADES, THE LOCATION OF ALL PIPE SLEEVES PASSING THROUGH FOUNDATION WALLS. PIPING IS NOT TO RUN THROUGH OR BELOW FOOTINGS. FOOTINGS TO BE STEPPED DOWN TO SUIT. SEE TYPICAL DETAILS ON DRAWING S101.
24. EARTH FORMS ARE NOT PERMITTED ON THIS PROJECT.
25. DIVERT SURFACE WATER, SNOW MELT OR RAIN, FROM ENTERING THE EXCAVATION BY POSITIVE MEANS SUCH AS CONSTRUCTION OF A BERM AROUND OR OPEN TRENCH TO SUMP, AROUND THE EXCAVATION.
20. IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE LATERAL STABILITY OF THE EXISTING STRUCTURE INCLUDING, BUT NOT LIMITED TO, THE EXISTING CONCRETE FOUNDATIONS AND THE MASONRY WALLS ABOVE GRADE DURING ALL ASPECTS OF THE CONSTRUCTION OF THE ADDITION. MAINTAIN ON SITE ALL NECESSARY DOCUMENTATION SUCH AS PROFESSIONAL ENGINEER'S WRITTEN PROCEDURES OR DRAWINGS FOR ALL TEMPORARY WORKS, INCLUDING SHORING OF EXISTING FOUNDATION WALLS DURING EXCAVATION AND BACKFILL PROCEDURES DESCRIBED ABOVE.
21. EXCAVATION AND BACKFILL FOR BUILDING FOUNDATIONS TO BE COORDINATED WITH RELOCATION AND REMOVAL OF EXISTING SITE SERVICES. PROVIDE ALL NECESSARY LATERAL AND VERTICAL SUPPORT OF EXISTING UNDERGROUND SERVICES UNTIL SUCH TIME AS THEY ARE DECOMMISSIONED OR RELOCATED. ALL DECOMMISSIONED SERVICES LOCATED BELOW NEW SLAB ON GRADE TO BE REMOVED AND TRENCHES BACKFILLED WITH GRANULAR 'B' COMPACTED TO 100% STANDARD PROCTOR DRY DENSITY.
27. WHERE CONDITIONS DIFFER SIGNIFICANTLY FROM THOSE SHOWN ON THE DRAWINGS, THE GENERAL CONTRACTOR IS TO CONTACT THE CONSULTANT BEFORE PROCEEDING WITH THE WORK.

19. 'SF' DENOTES LOCATION OF STEP. SEE DETAIL 3-E ON DRAWING S-102.
20. 'CJ' DENOTES SLAB ON GRADE CONTROL JOINT. SEE DETAIL 3-G ON DRAWING S-102. GENERAL CONTRACTOR CO- ORDINATE LOCATIONS OF SLAB ON GRADE CONSTRUCTION AND SAW CUT CONTROL JOINTS WITH ARCHITECTURAL FLOOR FINISHES AND OR ARCHITECTURAL FLOOR CONTROL JOINTS 21. 'WCJ' DENOTES FOUNDATION WALL CONTROL OR CONSTRUCTION JOINT. SEE DETAIL "3-D" ON DRAWING S-102.
22. +/-XXX DENOTES UNDERSIDE OF NEW FOOTING ELEVATION IN METERS (GEODETIC ELEVATION)
23. +/-XXX DENOTES UNDERSIDE OF EXISTING FOOTING ELEVATION IN METERS (GEODETIC). ELEVATION IS ASSUMED BASED ON DRAWINGS PROVIDED BY THE OWNER AND PRESENTED IN GOOD FAITH. THE INFORMATION IS NOT TO BE CONSIDERED THE "AS-BUILT" CONDITION.





Brock University

PROJECT LOGO

TRUE NORTH | CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
9	STRUCTURAL ADDENDUM No 1	2022-02-17
8	ISSUED FOR TENDER	2022-01-17
7	ISSUED FOR 90% CONSTRUCTION DOCUMENTS	2021-12-09
6	ISSUED FOR PERMIT	2021-11-23
5	ISSUED FOR 75% CONSTRUCTION DOCUMENTS	2021-11-23
4	ISSUED FOR 50% CONSTRUCTION DOCUMENTS	2021-10-07
3	ISSUED FOR 25% CONSTRUCTION DOCUMENTS	2021-09-30
2	Issued for Design Development	2020-07-22
1	Issued for Schematic Design	2020-09-18

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DO NOT SCALE THE DRAWINGS.

MTE
Engineers, Scientists, Surveyors
519-204-6510

SEAL

CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
LEVEL 2 FOUNDATION PLAN

DRAWN BY:	DATE:
Author	09/09/20
CHECKED BY:	SCALE:
Checker	As indicated

PROJECT NO.: 48031-100 (20050)

DRAWING NO.: **S201**

FILENAME: C:\Users\AMatthews\Documents\48031-100_MAC RENO-S-v21_AMatthewsCV1.VWT.rvt
PLOTTED: 01/10/2022 9:57:00 AM

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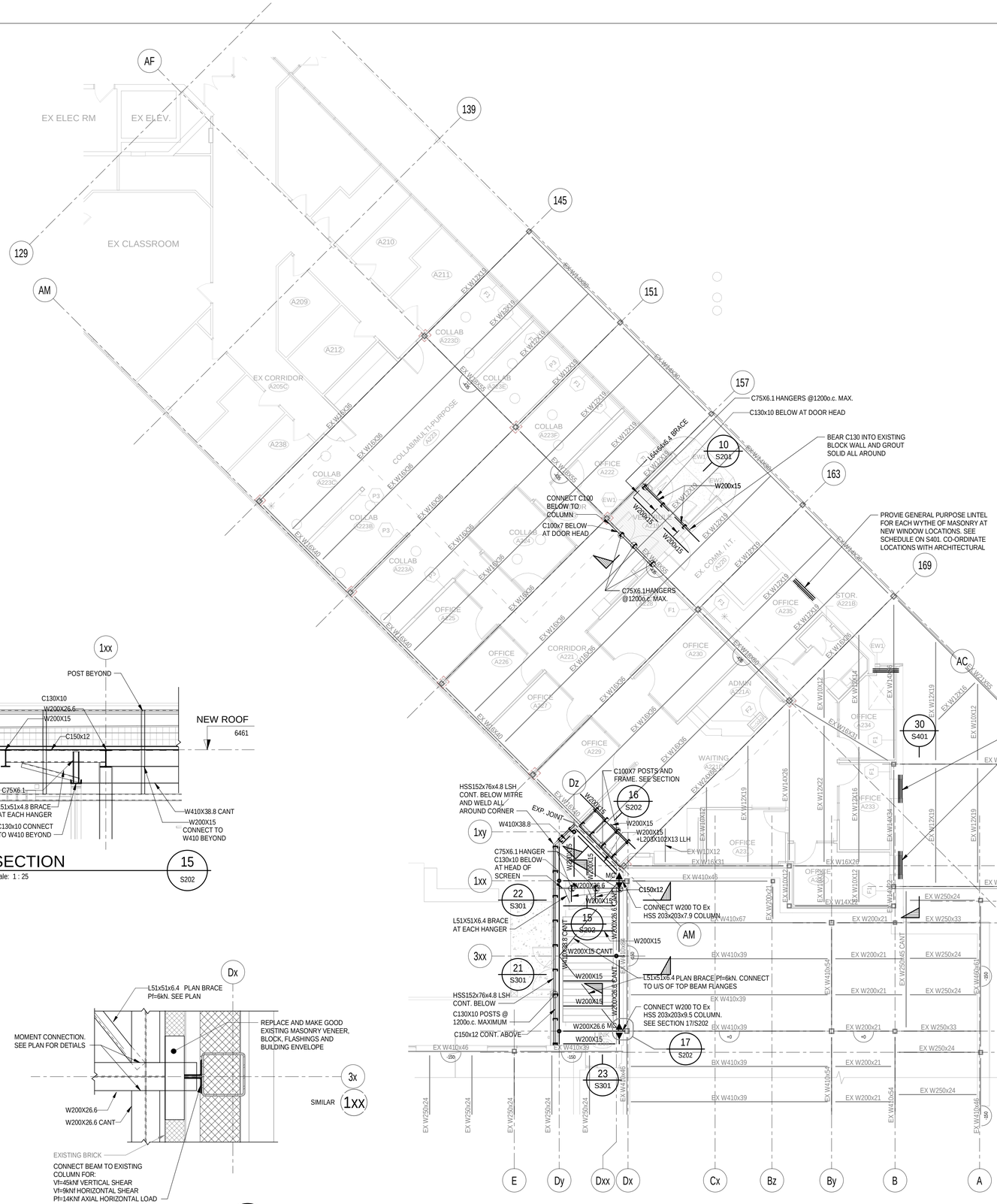
LEVEL 3 FRAMING PLAN

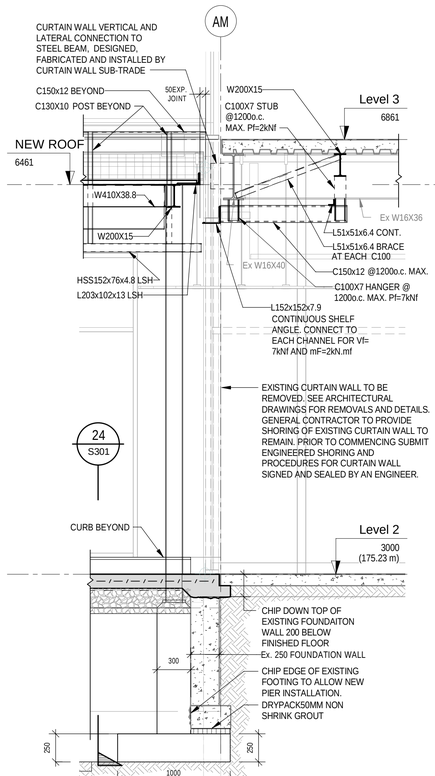
Scale: 1 : 100

1. THESE NOTES ARE TO BE READ IN CONJUNCTION WITH THE FRAMING PLANS SHOWN ON THIS DRAWING.
2. FOR DESIGN LOADS REFER TO LOADING PLAN AND LOAD TABLES ON DRAWING S101.
3. FOR COLUMNS DETAILS SEE SCHEDULE ON DRAWINGS SXXX.
4. ALL OPENINGS IN MASONRY WALLS REQUIRE A LINTEL. COORDINATE LOCATIONS AND CLEAR MASONRY OPENING WIDTHS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.

   FOR LOAD-BEARING WALLS LINTELS ARE DENOTED "Lxx" AND ARE LISTED IN THE "LINTEL SCHEDULE – LINTELS FOR IDENTIFIED OPENINGS" SEE SCHEDULES ON DRAWING S401

   OPENINGS IN NON-LOAD-BEARING WALLS, OPENINGS ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS, COORDINATE LOCATIONS AND CLEAR MASONRY OPENING WIDTHS WITH ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS AND SELECT THE APPROPRIATE LINTEL FROM "LINTEL SCHEDULE – GENERAL PURPOSE LINTELS" AS SHOWN IN THE SCHEDULES ON DRAWING S104, USING WALL CONSTRUCTION AND MAXIMUM CLEAR OPENING WIDTH AS THE CRITERIA.
5. FOR THE LINK ROOF FRAMING THE UNDERSIDE OF 38mm STEEL ROOF DECK AT HIGH POINTS OF ROOF IS AT 3461mm ABOVE FINISHED LEVEL 2 FLOOR OR ZERO(0)mm.
6. FOR THE LINK ROOF FRAMING, THE TOP OF BEAMS SUPPORTING ROOF DECK ARE AT 3461mm ABOVE FINISHED LEVEL 2 FLOOR AT ROOF HIGH POINTS UNLESS NOTED THUS "XXX" ON PLAN.
7. LINK ROOF CONSTRUCTION TO BE 38mm DEEP STEEL ROOF DECK WITH FLUTES AT 152mm ON CENTRE, MINIMUM 0.91 NCT (VIC WEST RD938 OR APPROVED ALTERNATE) SUPPORTED BY BEAMS SPACED AS SHOWN ON PLAN. DETAIL DECK SUCH THAT DECK SHEETS STOP/START AT LOCATIONS WHERE DECK SLOPE CHANGE. WHERE POSSIBLE DECK TO BE 3 SPAN CONTINUOUS. REFER TO PLAN FOR AREAS OF THICKER NOMINAL CORE THICKNESS.
8. CONTRACTORS ATTENTION IS DRAWN TO THE REQUIREMENT FOR CONNECTIONS OF NEW STEEL ROOF FRAMING TO THE EXISTING STEEL BUILDING FRAMING MEMBERS. REFER TO PLAN AND SECTIONS FOR LOCATIONS.
9. SEE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL OPENINGS THROUGH ROOF DECK. PROVIDE SUITABLE DECK REINFORCING AS DESCRIBED IN THE SPECIFICATIONS OR STEEL FRAMING AS DESCRIBED IN DETAIL '5-B' ON S104, FOR ALL DECK OPENINGS.
10. ALL MASONRY WALLS ARE TO BE BUILT TO THE UNDERSIDE OF THE DECK ABOVE. REFER TO CONTRACT DOCUMENTS FOR FIRE-STOPPING REQUIREMENTS.
11. THE TOPS OF ALL MASONRY WALLS ARE TO HAVE LATERAL SUPPORT, SEE 'LATERAL SUPPORT' DETAILS ON DRAWING S104.
12. PERIMETER ANGLES, OR DOUBLE ANGLE MASONRY SUPPORTS SHOWN ON PLAN OR SECTION ARE TO BE CONTINUOUS UNLESS NOTED OTHERWISE. PROVIDE COMPLETE PENETRATION WELDS AT ALL SPLICES.
13. ALL BEAMS AND COLUMNS TO BE CSA G40.21 GRADE 350W, (350 MPa YIELD). ALL OTHER STRUCTURAL SHAPES INCLUDING PLATES TO BE CSA G40.21 GRADE 300W (300 MPa YIELD), EXCEPT HOLLOW STRUCTURAL SECTIONS TO BE G40.21 GRADE 350W, CLASS `H' (350 MPa YIELD). NOTE THAT HOLLOW STRUCTURAL SECTIONS PRODUCED TO ASTM STANDARDS USED AS COMPRESSION MEMBERS ARE NOT EQUAL TO SECTIONS PRODUCED TO CSA G40.21.
14. "•" DENOTES SLOPED BEAM OR OPEN WEB STEEL JOIST.
15. "MC" ▶ DENOTES MOMENT CONNECTION. DESIGN CONNECTION FOR 100% OF FACTORED MOMENT CAPACITY AND 50% OF FACTORED SHEAR CAPACITY OF MEMBER.
16. XX DENOTES FACTORED AXIAL LOAD IN BEAM IN kN. DESIGN BEAM TO COLUMN OR BEAM TO BEAM CONNECTIONS FOR VERTICAL SHEAR FORCED AS DEFINED IN THE SPECIFICATION CONCURRENT WITH THE ACIAL LOAD SHOWN ON PLANS.
17. "kNs" DENOTES SPECIFIED LOAD IN KILONEWTONS.
18. "kNf" DENOTES ULTIMATE LIMIT STATES LOAD IN KILONEWTONS.





SECTION

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16 S201

SECTION

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SECTION

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17 S202

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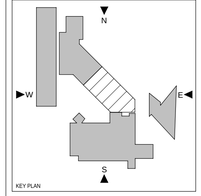
Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH



KEY PLAN

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8	ISSUED FOR TENDER	2022-03-17
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5	ISSUED FOR 75% CONSTRUCTION DOCUMENTS	2021-11-23
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3	ISSUED FOR 25% CONSTRUCTION DOCUMENTS	2021-09-30
2	Issued for Design Development	2020-07-22
1	Issued for Schematic Design	2020-09-18

REVISIONS

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DO NOT SCALE THE DRAWINGS.

SEAL

CONSULTANTS:

MTE
Engineers, Scientists, Surveyors
519-204-6510

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

LEVEL 3 FRAMING PLAN

DRAWN BY:	Author	DATE:	09/09/20
CHECKED BY:	Checker	SCALE:	As indicated

PROJECT NO.: 48031-100 (20050)

DRAWING NO.: **S202**

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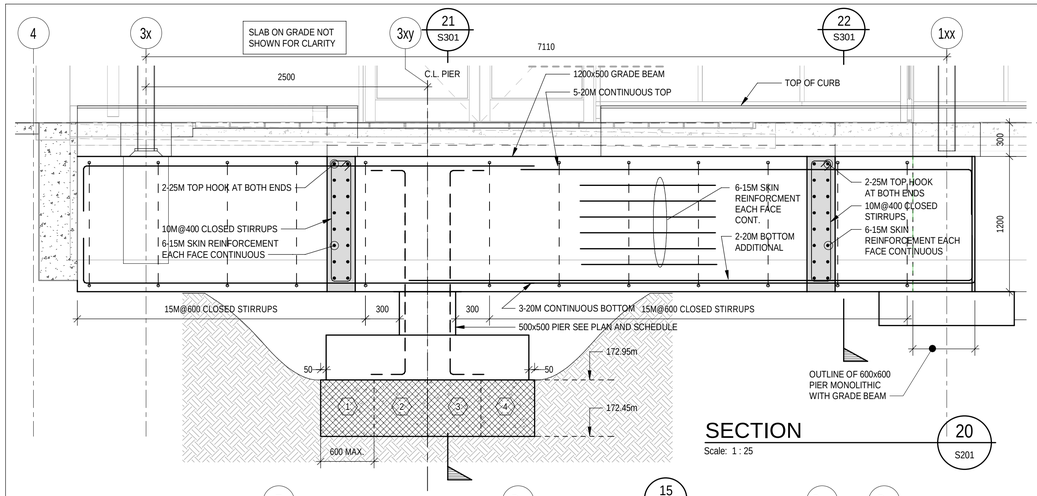

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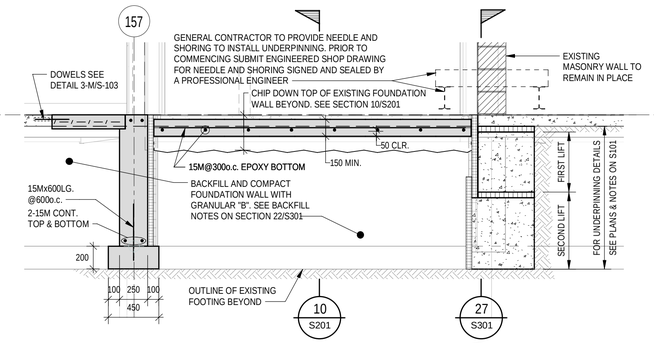

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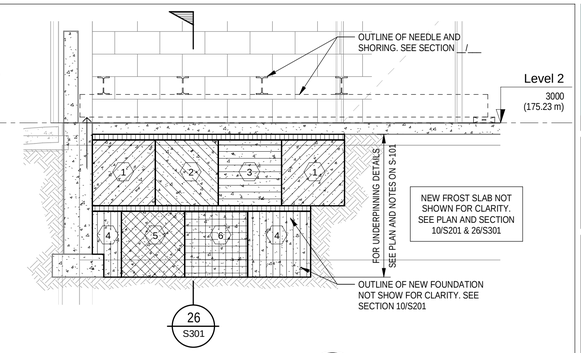

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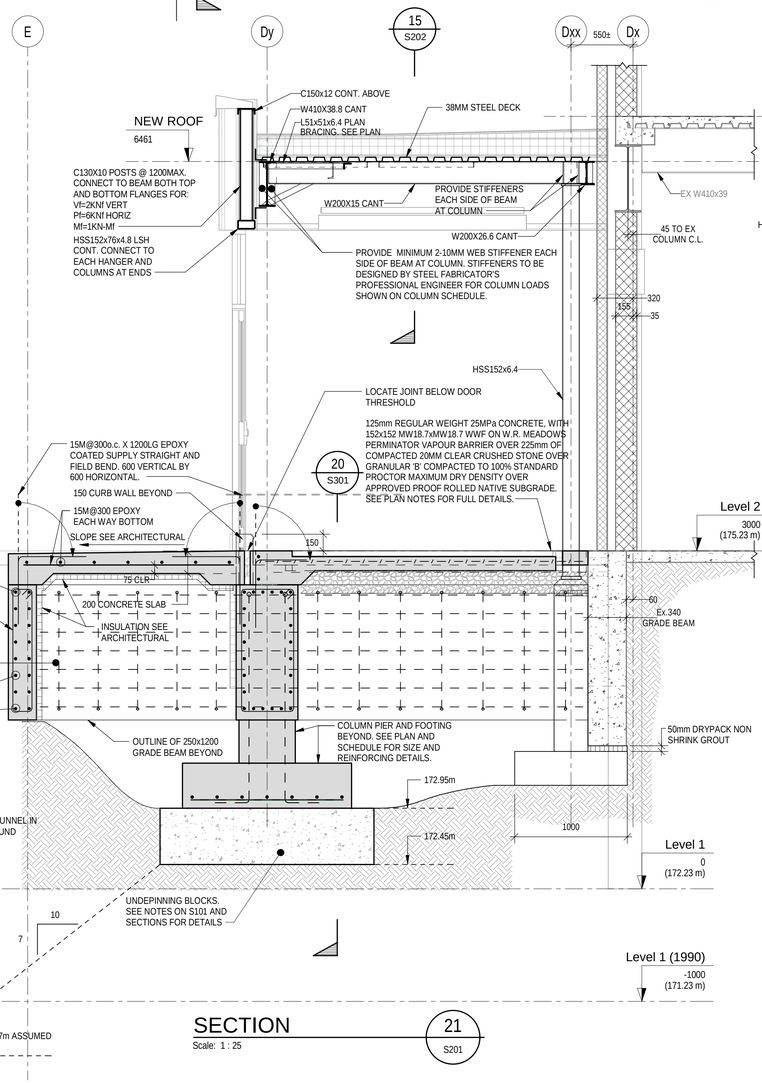

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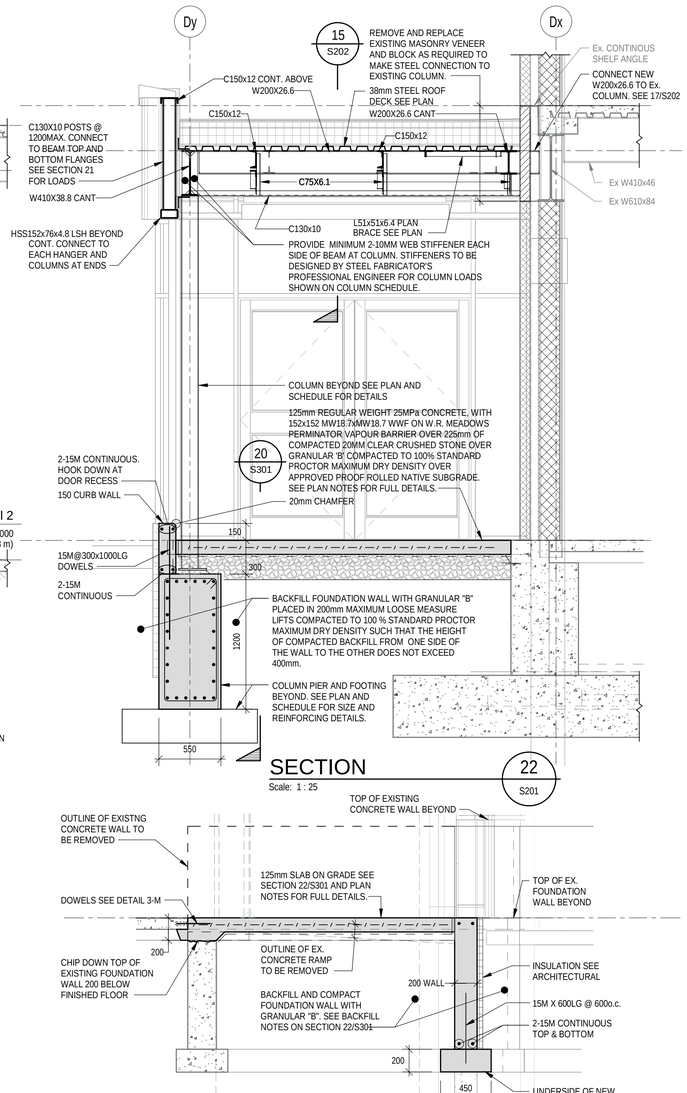

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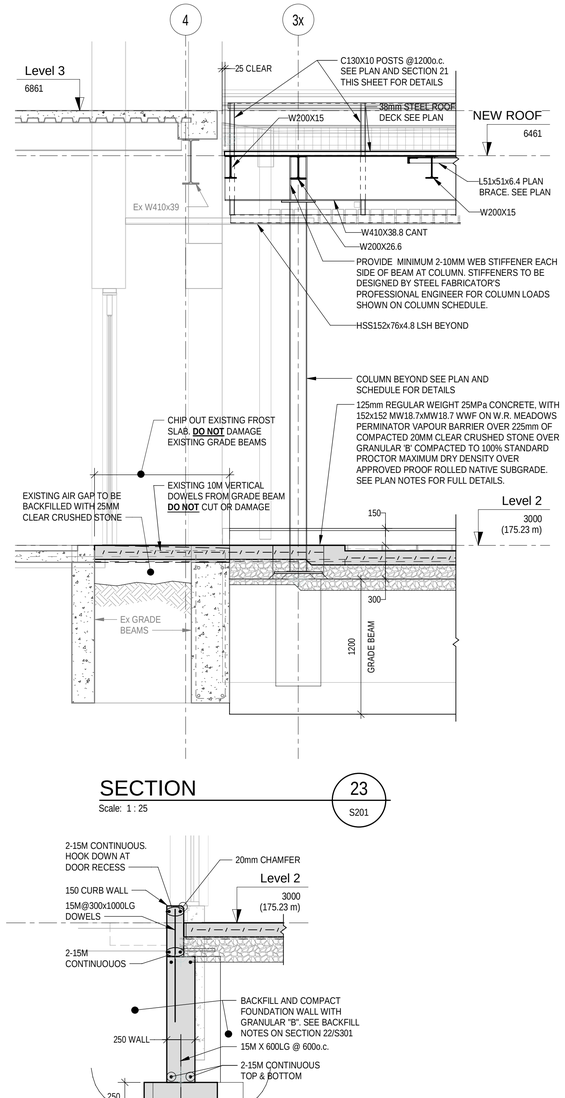

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23 S201

SECTION
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25 S201

SECTION
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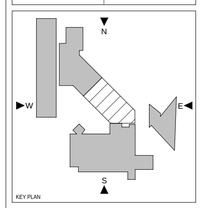
24 S201

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH



KEY PLAN

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SEAL

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PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
SECTIONS

DRAWN BY: Author	DATE: 07/20/21
CHECKED BY: Checker	SCALE: 1 : 25

PROJECT NO.: 48031-100 (20050)

DRAWING NO.: **S301**

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TABLE 1 - CLASS `B' LAP LENGTHS

BAR TYPE	BAR LOCATION	BAR SIZE	f'c=20MPa	f'c=25MPa	f'c=30MPa	f'c=35MPa	f'c=40MPa
BLACK BAR	TOP HORIZONTAL BARS (BARS WITH MORE THAN 300mm OF FRESH CONCRETE PLACED BELOW BAR)	10M	620mm	550mm	500mm	470mm	440mm
		15M	870mm	780mm	710mm	660mm	620mm
		20M	1070mm	960mm	870mm	810mm	760mm
		25M	1720mm	1540mm	1400mm	1300mm	1220mm
		30M	2030mm	1820mm	1660mm	1540mm	1440mm
		35M	2430mm	2180mm	1990mm	1850mm	1720mm
	OTHER THAN TOP HORIZONTAL BARS	10M	480mm	430mm	390mm	360mm	340mm
		15M	670mm	600mm	550mm	510mm	480mm
		20M	820mm	740mm	670mm	620mm	580mm
		25M	1330mm	1200mm	1080mm	1000mm	940mm
		30M	1570mm	1400mm	1280mm	1180mm	1110mm
		35M	1870mm	1670mm	1530mm	1420mm	1320mm
EPOXY COATED BAR	TOP HORIZONTAL BARS (BARS WITH MORE THAN 300mm OF FRESH CONCRETE PLACED BELOW BAR)	10M	850mm	750mm	700mm	650mm	600mm
		15M	1150mm	1050mm	950mm	900mm	850mm
		20M	1400mm	1260mm	1150mm	1100mm	1000mm
		25M	2250mm	2050mm	1850mm	1700mm	1600mm
		30M	2700mm	2400mm	2200mm	2050mm	1900mm
		35M	3200mm	2850mm	2600mm	2400mm	2250mm
	OTHER THAN TOP HORIZONTAL BARS	10M	720mm	640mm	580mm	540mm	500mm
		15M	1020mm	900mm	820mm	760mm	720mm
		20M	1240mm	1100mm	1020mm	940mm	880mm
		25M	1980mm	1780mm	1620mm	1500mm	1400mm
		30M	2360mm	2100mm	1920mm	1780mm	1660mm
		35M	2800mm	2520mm	2300mm	2120mm	1980mm

NOTES:

1 - CLASS `B' LAP LENGTH IN ACCORDANCE WITH CSA A23.3-94, 12.15.1 (LAP=1.3 x DEVELOPMENT LENGTH)

2 - TABLE VALID FOR:
- NORMAL DENSITY CONCRETE
- DEFORMED REINFORCEMENT, fy=400 MPa
- CLEAR COVER AT LEAST 1.0 d_b
- BEAMS AND COLUMNS:
  - CLEAR SPACING BETWEEN BARS NOT LESS THAN 1.4 d_b
  - MEMBERS CONTAINING MINIMUM STIRRUP OR TIES WITHIN SPLICE LENGTH
- SLABS AND WALLS:
  - CLEAR SPACING BETWEEN BARS NOT LESS THAN 2.0 d_b

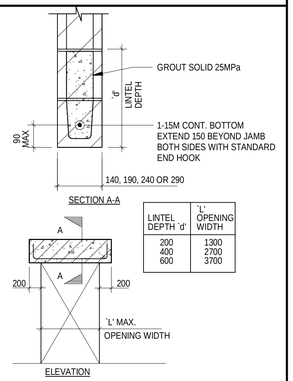
TABLE 3 - LINTEL SCHEDULES

GENERAL PURPOSE LINTELS

STEEL LINTELS

MAXIMUM CLEAR SPAN	MATERIAL	MASONRY TYPE
1400mm	L-89 x 89 x 6.4	90 BRICK OR 90 BLOCK PER WYTHE
1800mm	L-127 x 89 x 6.4 LLV	
2200mm	L-127 x 89 x 7.9 LLV	
2800mm	L-152 x 102 x 9.5 LLV	
2000mm	2 L-89 x 64 x 6.4 LLV	140 BLOCK
1800mm	2 L-89 x 89 x 6.4	190 BLOCK
2400mm	2 L-127 x 89 x 6.4 LLV	
4200mm	S200x27 + PL 170x6	
1400mm	L-102 x 102 x 6.4 + L-127 x 102 x 6.4	240 BLOCK
3000mm	S150x19 + PL 220x6	
1200mm	S100x11 + PL 270x6	290 BLOCK
1900mm	S150x19 + PL 270x6	
3500mm	S200x27 + PL 270x6	

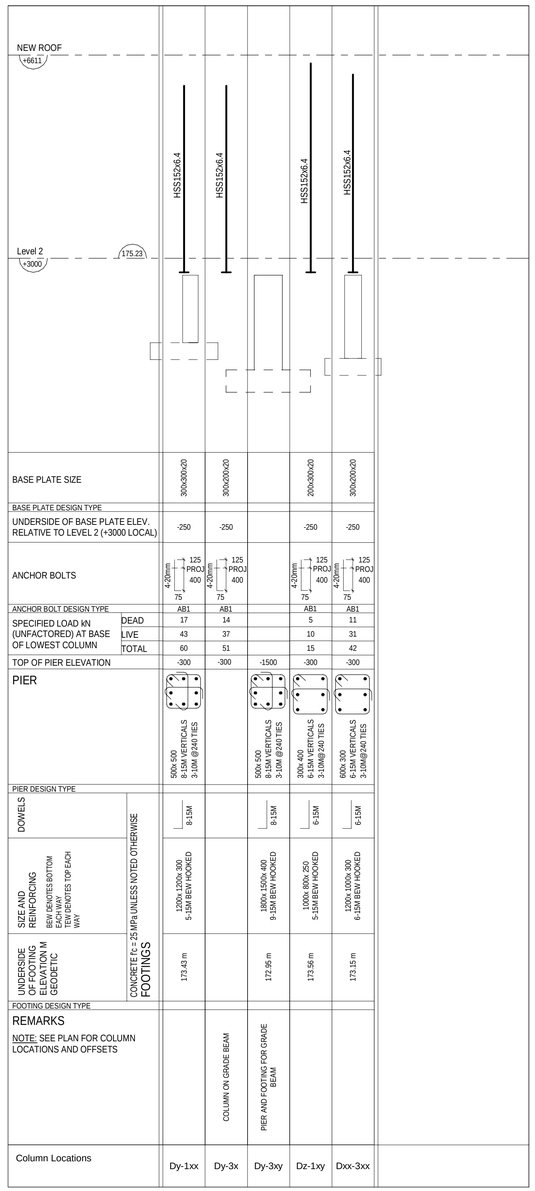
REINFORCED MASONRY LINTELS



LINTEL DEPTH 'd'	'L' OPENING WIDTH
200	1300
400	2700
600	3700

CONDITIONS OF USE FOR GENERAL PURPOSE LINTEL SCHEDULE:

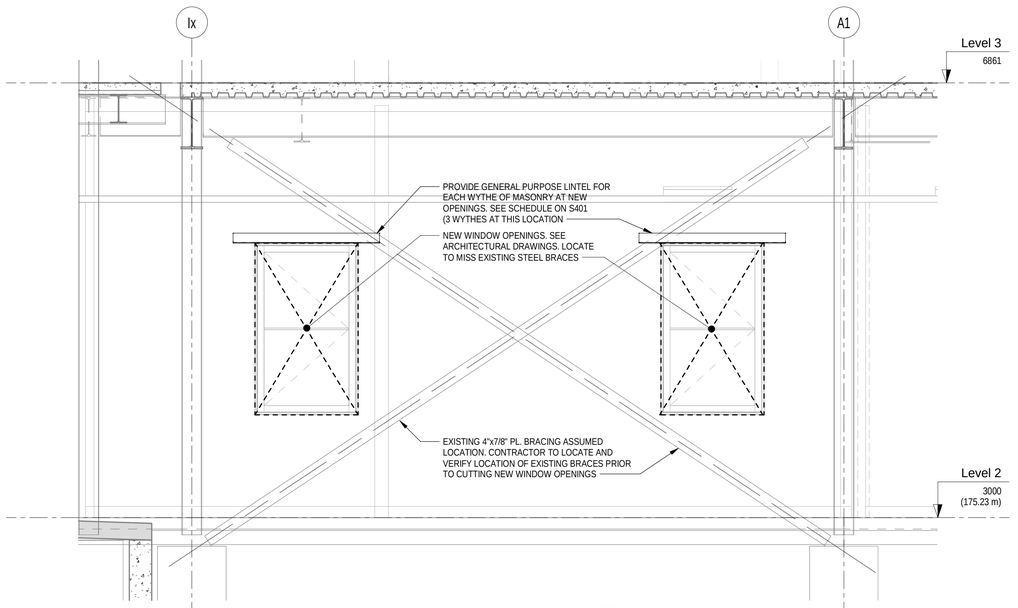
1. WHERE LINTEL MARKS ARE SHOWN THUS: "L#". REFER TO SCHEDULE "LINTELS FOR IDENTIFIED OPENINGS" ON THIS DRAWING.
2. A SUITABLE LINTEL IS TO BE SUPPLIED FOR ALL MASONRY OPENINGS.
3. THIS SCHEDULE IS TO BE READ IN CONJUNCTION WITH THE ARCHITECTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
4. THIS SCHEDULE IS TO BE USED AS A GUIDE WITH REGARD TO WALL SIZE AND OPENING WIDTH FOR ANY LINTELS NOT SPECIFICALLY NOTED ON PLAN.
5. CONCRETE BLOCK UNITS ARE HOLLOW AND UNFILLED EXCEPT FOR FIRST COURSE ABOVE LINTEL WHICH SHALL BE FILLED SOLID UNLESS NOTED OTHERWISE.
6. DO NOT SHORE LINTELS DURING WALL CONSTRUCTION.
7. PROVIDE 200mm BEARING EACH END ON 400mm LONG BY 2 COURSES DEEP OF FILLED OR SOLID MASONRY UNLESS NOTED OTHERWISE ON DRAWING.
8. CONNECT LINTELS DIRECTLY TO STRUCTURE WHERE INSUFFICIENT BEARING IS AVAILABLE.
9. LINTEL SUPPORTING EXTERIOR WYTHE OF MASONRY IN EXTERIOR WALLS SHALL BE HOT DIP GALVANIZED.
10. ALL DOUBLE ANGLE LINTELS TO BE WELDED BACK-TO-BACK TOP AND BOTTOM WITH 5mm FILLET WELDS x 50mm LONG WELD AT 600mm o/c.
11. LINTELS IN CURVED WALLS ARE TO BE ROLLED TO REQUIRED RADIUS.
12. MASONRY CONTROL JOINTS ARE NOT TO BE LOCATED THROUGH LINTELS.
13. FULL HEAD JOINTS ARE REQUIRED FOR DEPTH OF LINTEL.



BASE PLATE SIZE		300x300x20	300x200x20		200x300x20	300x200x20
BASE PLATE DESIGN TYPE						
UNDERSIDE OF BASE PLATE ELEV. RELATIVE TO LEVEL 2 (+3000 LOCAL)		-250	-250		-250	-250
ANCHOR BOLTS		4-20mm 125 PROJ. 400 75	4-20mm 125 PROJ. 400 75		4-20mm 125 PROJ. 400 75	4-20mm 125 PROJ. 400 75
ANCHOR BOLT DESIGN TYPE		A81	A81		A81	A81
SPECIFIED LOAD kN (UNFACTORED) AT BASE OF LOWEST COLUMN	DEAD	17	14		5	11
	LIVE	43	37		10	31
	TOTAL	60	51		15	42
TOP OF PIER ELEVATION		-300	-300	-1500	-300	-300
PIER		600x 500 8-15M VERTICALS 3-10M @240 TIES		500x 500 8-15M VERTICALS 3-10M @240 TIES	700x 400 6-15M VERTICALS 3-10M@240 TIES	600x 300 6-15M VERTICALS 3-10M@240 TIES
PIER DESIGN TYPE						
DOWELS		8-15M		8-15M	6-15M	6-15M
SIZE AND REINFORCING (BEW DENOTES BOTTOM EACH WAY / EW DENOTES TOP EACH WAY)		1200x 1200x 300 9-15M BEW HOOKED		1800x 1500x 400 9-15M BEW HOOKED	1000x 800x 250 9-15M BEW HOOKED	1200x 1000x 300 6-15M BEW HOOKED
UNDERSIDE OF FOOTING ELEVATION M GEODETIC	CONCRETE f'c= 25 MPa UNLESS NOTED OTHERWISE FOOTINGS	173.43 m		172.95 m	173.58 m	173.15 m
FOOTING DESIGN TYPE						
REMARKS NOTE: SEE PLAN FOR COLUMN LOCATIONS AND OFFSETS			COLUMN ON GRADE BEAM	PIER AND FOOTING FOR GRADE BEAM		
Column Locations		Dy-1xx	Dy-3x	Dy-3xy	Dz-1xy	Dxx-3xx

COLUMN SCHEDULE NOTES

1. ALL LOADS SHOWN IN SCHEDULE ARE UNFACTORED UNLESS NOTED OTHERWISE.
2. NEGATIVE LOADS REPRESENT UPLIFT
3. ALL WIDE FLANGE COLUMNS TO BE CSA G40.21 GRADE 350W, (350 MPa YIELD).
4. ALL HOLLOW STRUCTURAL SECTION COLUMNS TO BE G40.21 GRADE 350W, CLASS `H' (350 MPa YIELD). NOTE THAT HOLLOW STRUCTURAL SECTIONS PRODUCED TO ASTM STANDARDS USED AS COMPRESSION MEMBERS ARE NOT EQUAL TO SECTIONS PRODUCED TO CSA G40.21.
5. ALL BASE PLATES TO BE CSA G40.21 GRADE 300W (300 MPa YIELD)
6. FOR FIREPROOFING SEE ARCHITECTURAL DRAWINGS
7. FOR TYPICAL MASONRY TO STEEL ANCHORAGE DETAILS SEE DRAWING S-103 & S-104. SEE ARCHITECTURL DRAWINGS FOR MASONRY LOCATIONS
8. FOR EXACT COLUMN HEIGHTS REFER TO ARCHITECTURAL DRAWINGS AND STRUCTURAL FRAMING PLANS
9. "BEW" DENOTES BOTTOM EACH WAY



SECTION
Scale: 1 : 25

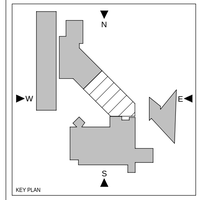
30
S201

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH



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BROCK UNIVERSITY - MCA RENOVATION

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1812 Sir Isaac Brock Way
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DRAWING TITLE:

SCHEDULES

DRAWN BY: Author	DATE: 07/22/21
CHECKED BY: Checker	SCALE: As indicated

PROJECT NO.: 48031-100 (20050)

DRAWING NO.: **S401**

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GENERAL NOTES

1. THE CONTRACTOR SHALL CO-ORDINATE WITH THE STRUCTURAL TO PROVIDE OPENINGS AND SLEEVES THROUGH STRUCTURAL ELEMENTS WHERE REQUIRED.
2. DO NOT SCALE DRAWINGS FOR INSTALLATION PURPOSES. OBTAIN ALL DIMENSIONS FROM ARCHITECTURAL PLANS, MANUFACTURER'S SHOP DRAWINGS,AND ON SITE INSPECTIONS.
3. MECHANICAL, DIV. 2-14 AND ELECTRICAL TRADES SHALL WORK IN CONJUNCTION WITH ONE ANOTHER SO AS TO AVOID INTERFERENCE'S BETWEEN PIPING, DUCTWORK, CONDUIT, LIGHTING FIXTURES, ETC.
4. WORK SHALL BE CO-ORDINATED THROUGH THE GENERAL CONTRACTOR PRIOR TO INSTALLATION OF ANY EQUIPMENT, DUCTWORK AND CONTROLS. CO-ORDINATE WITH ARCHITECTURAL ELEVATIONS FOR ARCHITECTURAL, MECHANICAL, AND ELECTRICAL SPACE ALLOCATIONS.
5. PROPERLY SUPPORT CEILING MOUNTED EQUIPMENT AND ANY OTHER EQUIPMENT INDEPENDENT OF CEILING SUPPORT SYSTEM. REFER TO ARCHITECTURAL DETAILS AND CO-ORDINATE WITH STRUCTURAL TRADE.
6. REFER TO ARCHITECTURAL FOR OWNER SUPPLIED EQUIPMENT. CONFIRM ALL MECHANICAL REQUIREMENTS AND PROVIDE TO SUIT.
7. REVIEW ARCHITECTURAL, ELECTRICAL, AND STRUCTURAL DRAWINGS AND PROVIDE ON SITE INSPECTIONS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
8. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH CODES, BULLETINS ETC. AND REQUIREMENTS OF ALL INSPECTION AUTHORITIES.
9. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL MECHANICAL SERVICES TO THE OCCUPIED AREA THROUGHOUT THE PHASING OF THE WORK. PROVIDE CONSTRUCTION VALVES, TEMPORARY DUCTWORK AND PIPING AS REQUIRED TO LIMIT THE SHUT DOWN OF SERVICES TO ONE TIME.

PLUMBING NOTES

1. CONTRACTOR IS TO VERIFY CONNECTION POINTS TO EXISTING SERVICES ON SITE.
2. CONTRACTOR IS TO CLEAR EXISTING DUCTWORK WHEN INSTALLING NEW PIPING. CLEARANCES TO BE VERIFIED ON SITE.
3. PROVIDE A CLEANOUT FROM EACH PLUMBING FIXTURE WHERE REQUIRED BY LATEST ONTARIO BUILDING CODE.
4. ALL PLUMBING FIXTURES INCLUDING FLOOR DRAINS (HUB, FUNNEL FLOOR DRAINS) TO BE TRAPPED AND VENTED AS REQUIRED BY ONTARIO LATEST BUILDING CODE.
5. CONTRACTOR IS TO REMOVE ALL OBSOLETE PIPING WHEREVER POSSIBLE.
6. BEFORE CUTTING ANY HOLES THROUGH THE EXISTING SLAB REFER TO STRUCTURAL DRAWINGS FOR GENERAL REQUIREMENTS.
7. AFTER PIPE REMOVAL ALL EXISTING OPENINGS IN FIRE SEPARATION ARE TO BE FILLED-IN TO MAINTAIN INTEGRITY OF THAT FIRE SEPARATION.
8. RECONNECT VENTS FROM EXISTING EQUIPMENT AND PLUMBING FIXTURES WHICH ARE TO REMAIN TO NEW VENTS AS REQUIRED.
9. PROVIDE A CLEANOUT AT THE BOTTOM OF EVERY SOIL AND WASTE STACK THAT CONNECTS TO A HORIZONTAL DRAINAGE PIPE.
10. CHECK AND VERIFY LOCATION OF ALL PIPES, DUCTS AND EQUIPMENT WITH ALL OTHER TRADES TO PREVENT I NTERFERENCE. REMOVAL OR RELOCATION OF ANY SUCH WORK INTERFERING WITH WORK OF OTHER TRADES IS THE RESPONSIBILITY OF THE MECHANICAL TRADE CONCERNED UNLESS OTHERWISE APPROVED IN WRITING.
11. FOR MOUNTING HEIGHT OF ALL PLUMBING FIXTURES REFER TO ARCHITECTURAL DRAWINGS.
12. WHENEVER COLD AND HOT WATER DISTRIBUTION TO LAVATORIES IS TO RUN UNDER COUNTER, PIPING DISTRIBUTION IS TO BE INSTALLED AS TIGHT TO UNDER SIDE OF THE COUNTER AS POSSIBLE.
13. ALL WATER, SANITARY, SEWER AND VENT COPPER PIPING WITH SOLDER JOINTS SHALL BE LEAD FREE. DO NOT INSTALL WATER LINES IN OUTSIDE WALL WHERE THEY MAY FREEZE, UNLESS BOTH THE WALL AND THE PIPES ARE PROPERLY INSULATED.
14. INSTALL SHUT-OFF VALVES AT EACH PLUMBING FIXTURE.

HVAC NOTES

1. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR CO-ORDINATION OF GRILLES, DIFFUSERS AND OTHER ELEMENTS.
2. CONTRACTORS SHALL COORDINATE ALL CEILING FINISHES WITH OWNER AND MATCH EXISTING. CONTRACTOR SHALL REVIEW MECHANICAL DRAWINGS, ARCHITECTURAL REFLECTED CEILING PLANS AND ARCHITECTURAL ROOM FINISH SCHEDULES AS SOON AS CONTRACT DOCUMENTS ARE SIGNED. ADVISE CONSULTANT OF ANY CONFLICTS BETWEEN CEILING TYPE AND DIFFUSER/GRILLE TYPE.
3. THE CONTRACTOR SHALL VERIFY ALL CEILING FINISHES WITH ARCHITECTURAL DRAWINGS. CONTRACTOR AND DIFFUSER/GRILLE SUPPLIER ARE RESPONSIBLE TO PROVIDE ALL PLASTER AND FINISHING FRAMES, MOUNTING HARDWARE, AND ACCESSORIES TO SUIT ARCHITECTURAL CEILING TYPES. MECHANICAL CONTRACTOR SHALL CO-ORDINATE AND PROVIDE DETAILS OF MOUNTING REQUIREMENTS OF DIFFUSERS AND GRILLES IN DRYWALL CEILINGS TO DRYWALL TRADE AND ENSURE EDGES OF OPENINGS ARE FRAMED BY DRYWALL TRADE TO SUPPORT DIFFUSERS AND GRILLES PROPERLY. DIFFUSERS AND GRILLES MUST NOT BE SUPPORTED SOLELY BY HANGER WIRES.
4. PROPERLY SUPPORT CEILING MOUNTED EQUIPMENT AND ANY OTHER EQUIPMENT INDEPENDENT OF CEILING SUPPORT SYSTEM. REFER TO ARCHITECTURAL DETAILS AND CO-ORDINATE WITH STRUCTURAL TRADE.
5. FOR USE OF FLEXIBLE DUCTWORK REFER TO MECHANICAL SPECIFICATIONS.
6. CONTRACTOR TO CARRY FOR ADDITIONAL DUCTS AND DUCT FITTING REQUIRED TO CLEAR THE INTERFERENCES IN THE CEILING SPACE.
7. PROVIDE BALANCING DAMPER FOR EACH DIFFUSER AND CHILLED BEAM AND AIR VALVE. ALL LOCATIONS MAY NOT BE SHOWN ON PLANS.

GENERAL DEMOLITION NOTES

1. CONTRACTOR IS TO ENSURE THAT ALL EXISTING PIPING AND DUCTWORK SERVING EXISTING AREAS REMAIN IN SERVICE UNTIL THESE AREAS ARE RECONNECTED TO NEW SERVICES. ONLY THEN OBSOLETE PIPING IS TO BE REMOVED AS SHOWN.
2. ALL DISTURBED SURFACES AFTER PIPE AND DUCT REMOVAL OR REROUTING TO BE FILLED-IN WITH APPROPRIATE MATERIAL TO MAINTAIN FIRE SEPARATION AND PATCHED TO MATCH EXISTING OR NEW MATERIALS AND FINISHES.
3. CONTRACTOR IS TO ENSURE THAT ALL EXISTING REMOVED FIXTURES AND EQUIPMENT REMAIN THE PROPERTY OF THE OWNER. IF THE OWNER DECLARES NO INTEREST IN THE REMOVED ITEMS, ASSUME ONWERSHIP AND REMOVE THE ITEMS FROM THE SITE.
4. PROTECT ALL AREAS AFFECTED BY CONSTRUCTION FROM DIRT, DUST AND DEBRIS.
5. REMOVE ALL RUBBISH AND CLEAN SITE DAILY.
6. DEMOLITION AND REMOVAL OF PLUMBING AND DRAINAGE PIPING SHALL BE TAKEN BACK TO THE NEAREST WORKING MAIN AND BE CAPPED AS CLOSE TO THE WORKING MAIN AS POSSIBLE TO AVOID DEAD LEG LENGTHS OF PIPING.

FIRE SUPPRESSION NOTES

1. CONTRACTOR SHALL PAY ALL FEES, CHARGES AND COSTS REQUIRED FOR REVIEWS, INSPECTIONS, TESTS OR COMMENTS IN REGARDS TO THIS PROJECT.

MECHANICAL DRAWING LIST

DWG. No.	DRAWING NAME	CURRENT REVISION	CURRENT REVISION DESCRIPTION	DATE
M001	GENERAL NOTES & DRAWING LIST	6	ISSUED FOR TENDER	2022/01/19
M002	MECHANICAL LEGEND & ABBREVIATIONS	5	ISSUED FOR TENDER	2022/01/19
M100	LEVEL 2 PLUMBING, DRAINAGE & FIRE PROTECTION - DEMOLITION	5	ISSUED FOR TENDER	2022/01/19
M101	LEVEL 2 PLUMBING, DRAINAGE & FIRE PROTECTION - NEW	5	ISSUED FOR TENDER	2022/01/19
M200	LEVEL 2 HVAC - DEMOLITION	6	ISSUED FOR TENDER	2022/01/19
M201	LEVEL 2 HVAC - NEW	5	ISSUED FOR TENDER	2022/01/19
M300	MECHANICAL DETAILS, SCHEDULES & CONTROL DIAGRAMS	6	ISSUED FOR TENDER	2022/01/19

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
6	ISSUED FOR TENDER	2022/01/19
5	ISSUED FOR PERMIT	2021/11/24
4	ISSUED FOR 75% CD	2021/11/23
3	ISSUED FOR 50% CD	2021/10/07
2	ISSUED FOR 25% CD	2021/09/24
1	ISSUED FOR COSTING	2021/07/23

REVISIONS:

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CONSULTANTS:

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DRAWING TITLE:

GENERAL NOTES & DRAWING LIST

DRAWN BY: KS	DATE: 12/18/20
CHECKED BY: DR	SCALE:

PROJECT NO.: 20050

DRAWING NO.: **M001**

FILENAME: 20050_MCA RENO_M_V21_detached.rvt
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MECHANICAL LEGEND

SYMBOL	DESCRIPTION
G	GAS UTILITY METER & PRV STATION
M	METER
CO2	CARBON DIOXIDE SENSOR
CM	CARBON MONOXIDE SENSOR
H	HUMIDISTAT
HD	HEAT DETECTOR
RA	REVERSE ACTING THERMSTAT
O	OCCUPANCY SENSOR
SP	STATIC PRESSURE SENSOR
V	VENT
TS	TEMPERATURE SENSOR
	HOSE BIBB
	FLOOR DRAIN
	CAP/PLUG
	CARRIER BACK TO BACK
	CLEANOUT- IN LINE OR STACK
	FLOOR CLEANOUT
	PIPE ELBOW DOWN
	PIPE BOTTOM TAKE OFF
	PIPE ELBOW UP
	PIPE BOTTOM TAKE OFF
	PIPE SLEEVE
	TRAP
	UNION
	PUMP
	PIPE FLOW DIRECTION
	BALANCING VALVE
	BUTTERFLY VALVE
	CHECK VALVE
	ISOLATING (SHUT-OFF) VALVE
	STRAINER
	PRESSURE INDEPENDENT CONTROL (PIC) VALVE
	PRESSURE REGULATING VALVE
	2-WAY MODULATING CONTROL VALVE
	3-WAY 2-POSTITION CONTROL VALVE
	3-WAY MODULATING CONTROL VALVE
	2-WAY 2-POSITION CONTROL VALVE
	FLEXIBLE CONNECTION
DN	DUCT OFFSET
	DUCT OFFSET (SINGLE LINE)
	TURNING VANES
	DUCT-RECTANGULAR
	DUCT-ROUND
	ACOUSTIC LINED DUCT
	SUPPLY DUCT DOWN
	SUPPLY DUCT UP
	RETURN DUCT DOWN
	RETURN DUCT UP
	CEILING SUPPLY DIFFUSER
	CEILING EXHAUST/RETURN DIFFUSER
	LINEAR DIFFUSER
	CAPPED END DUCT
	DUCT REDUCER/ENLARGER
	TRANSITION RECTANGULAR DUCT TO ROUND DUCT
	FLEXIBLE ROUND DUCT
BD	BALANCING DAMPER
FD	FIRE DAMPER
SD	SPLITTER DAMPER
BDD	BACKDRAFT DAMPER
OBD	OPPOSED BLADE DAMPER
SDX.X	SMOKE DAMPER
MD	MOTORIZED DAMPER

SYMBOL	DESCRIPTION
	FLANGED CONNECTION
	PLUG CAP
	FLEXIBLE CONNECTION
LWCO	LOW WATER CUT OFF
	THERMOMETER
PG	PRESSURE GAUGE
M	ELECTRICALLY MONITORED SHUT-OFF VALVE
AV	AIR VENT
AAV	AUTOMATIC AIR VENT
PP	PETES PLUG
	FLOW METERING DEVICE (FMD)
	MEDICAL GAS OUTLET
M M	APPROVED DOUBLE CHECK VALVE BACKFLOW PREVENTOR ASSEMBLY
C	COOLING COIL
H C	HEATING COIL
AD	AREA DRAIN
SH	SHOWER
	HAND HOLE TRAP
	RUNNING TRAP
TCV	TEMPERATURE CONTROL VALVE
	FAN COIL UNIT
	CABINET BLOWER FAN
T	THERMOSTAT
R	RELIEF VALVE
	PLUG VALVE
NC	NORMALLY CLOSED VALVE
NO	NORMALLY OPEN VALVE
	PIPE ANCHOR
	EXPANSION COMPENSATOR c/w GUIDES
	PET COCK
	UNIT HEATERS
	CONTINUOUS CONVECTORS
	RADIANT PANELS
	REHEAT COILS
TS	TEMPERATURE SENSOR
PS	PRESSURE SWITCH OR SENSOR
FS	FLOW SWITCH
EP	ELECTRIC-PNEUMATIC RELAY
PE	PNEUMATIC-ELECTRIC RELAY
SD	SMOKE DETECTOR
SV	SOLENOID VALVE
WW F	FIRESTAT
WW FZ	FREEZESTAT
PDS	PRESSURE DIFFERENTIAL SWITCH
PG	PRESSURE GAUGE
T	TEMPERATURE GAUGE
	SPRINKLER RISER
	HEAT TRACE

SYMBOL	DESCRIPTION
	WATER GONG
	FIRE DEPARTMENT CONNECTION
TB	THRUST BLOCK
	FIRE EXTINGUISHER

ABBREVIATION	DESCRIPTION
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
AP	MEDICAL GAS ALARM PANEL
AT	AIR TERMINAL
BD	BALANCING DAMPER
BPW	BEDPAN WASHER
CB	CATCHBASIN
CBV	CIRCUIT BALANCING VALVE
CFM	CUBIC FEET PER MINUTE
CTE	CONNECT TO EXISTING
DG	DOOR GRILLE
DWF	DISTILLED WATER FAUCET
EF	EXHAUST FAN
ERV	ENERGY RECOVERY VENTILATOR
ESH	EMERGENCY SHOWER
EX	EXISTING
FD	FIRE DAMPER/FLOOR DRAIN
FFD	FUNNEL FLOOR DRAIN
FFH	FAN FORCED HEATER
FHC	FIRE HOSE CABINET
FP	FIRE PUMP
GPM	GALLONS PER MINUTE
HD	HUB DRAIN
HP	HEAT PUMP
INV. ELEV.	INVERT ELEVATOIN
LSV	LOCKED SERVICE VALVE
ME	MECHANICAL EQUIPMENT
MH	MANHOLE
NFHB	NON-FREEZE HOSE BIBB
OBV. ELEV.	OBVERT ELEVATION
PD	PLANTER DRAIN
PF	PLUMBING FIXTURE
REQ'D	REQUIRED
RF	RETURN FAN
RHC	REHEAT COIL
RWL	RAIN WATER LEADER
S,R,E	AIR DIFFUSERS
SF	SUPPLY FAN
SMV	SHOWER MIXING VALVE
SP	SMOKE PRESENCE DETECTOR
SPS	STATIC PRESSURE SENSOR
SS	SOIL STACK
SWT	SWIVETTE
TG	TRANSFER GRILLE
TYP.	TYPICAL
UH	UNIT HEATER
VS	VENT STACK
WF	WALL FIN HEATER
ZV	MEDICAL GAS ZONE VALVE

SYMBOL	DESCRIPTION
# / A###	SHEET & VIEW NUMBER
#	REVISION TAG
Room Name / ###	ROOM NAME AND NUMBER
AHU-1?	MECHANICAL EQUIPMENT TYPE
VRF-# / #T	HEAT PUMP TYPE HEAT PUMP FLOW RATE
	VARIABLE AIR VOLUME TERMINAL
## / ##a / ### L/s / ### L/s	TAG SIZE DESIGN MAX FLOWRATE (L/S) DESIGN MIN FLOWRATE (L/S)
	HYDRONIC TERMINAL
RC- ## / ##a / ### L/s	TAG DUCT CONNECTION SIZE DESIGN AIRFLOW (L/S)
	VRF INDOOR UNIT / HEAT PUMP
VRF-# / #T	TAG NOMINAL COOLING CAPACITY
	DIFFUSER, GRILLE, LOUVRE
1@ S-X / 1200 x 1200 / 800	TYPE DUCT CONNECTION SIZE DESIGN AIRFLOW (L/S) QUANTITY
	BLANK LINEAR DIFFUSER
1@ S-X / 48"	TYPE LENGTH
	PLUMBING FIXTURE TAG
X	FIXTURE TYPE
EX. 4"D DHR	PIPE SYSTEM AND SIZE TAG

SYMBOL	DESCRIPTION
SAN	SANITARY ABOVE GRADE
SAN	SANITARY BURRIED
ST	STORM ABOVE GRADE
ST	STORM BURRIED
	DOMESTIC COLD WATER
	DOMESTIC HOT WATER
	DOMESTIC HOT WATER RETURN

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
5	ISSUED FOR TENDER	2022/01/19
4	ISSUED FOR PERMIT	2021/11/24
3	ISSUED FOR 75% CD	2021/11/23
2	ISSUED FOR 50% CD	2021/10/07
1	ISSUED FOR 25% CD	2021/09/24

REVISIONS:

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L2S 3A1

DRAWING TITLE:

MECHANICAL LEGEND & ABBREVIATIONS

DRAWN BY: KS	DATE: 02/07/20
CHECKED BY: DR	SCALE: 1 : 100

PROJECT NO.: 20050

DRAWING NO.: **M002**

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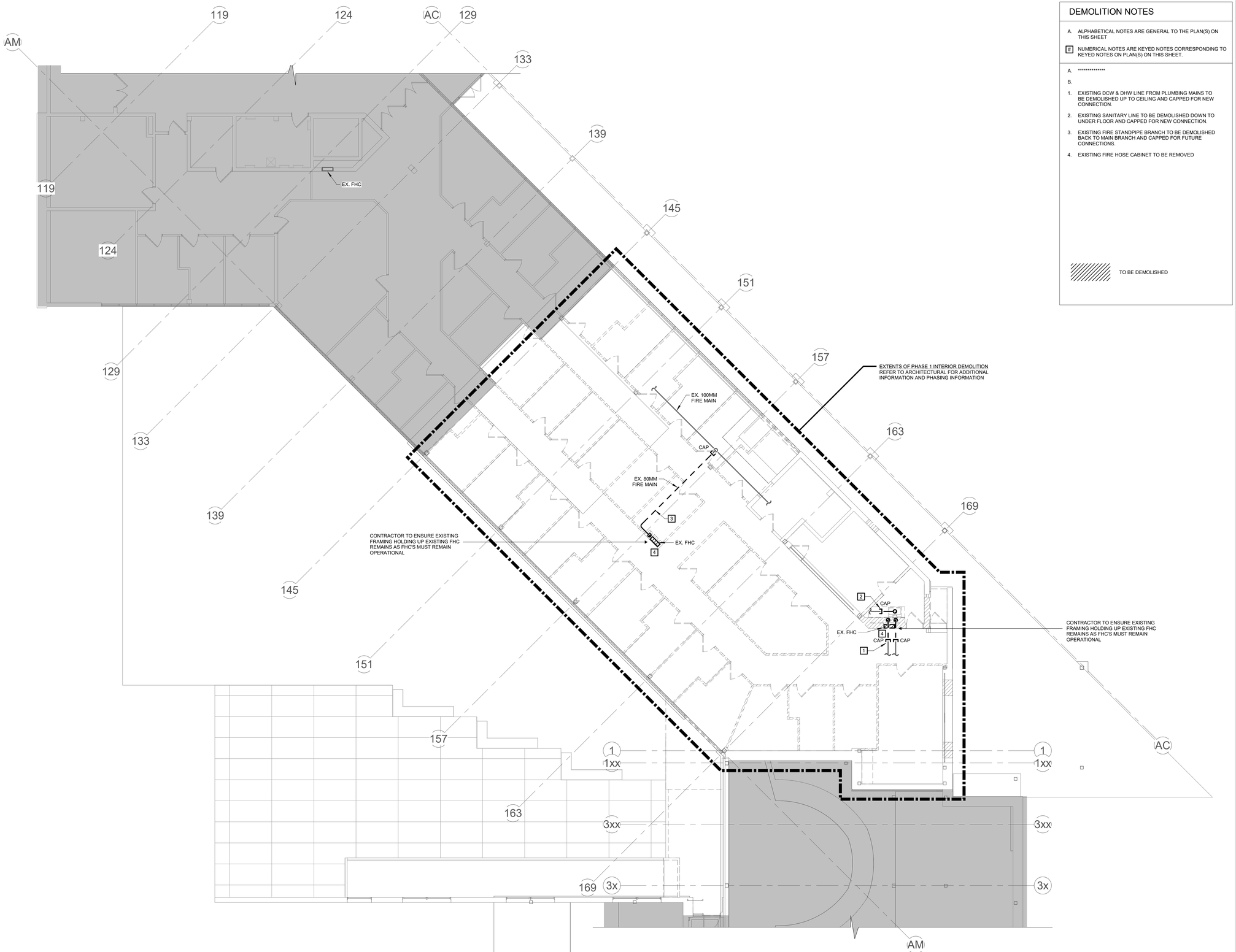

DEMOLITION NOTES

A. ALPHABETICAL NOTES ARE GENERAL TO THE PLAN(S) ON THIS SHEET

[#] NUMERICAL NOTES ARE KEYED NOTES CORRESPONDING TO KEYED NOTES ON PLAN(S) ON THIS SHEET.

A. ••••••••••••••

B.

1. EXISTING DCW & DHW LINE FROM PLUMBING MAINS TO BE DEMOLISHED UP TO CEILING AND CAPPED FOR NEW CONNECTION.
2. EXISTING SANITARY LINE TO BE DEMOLISHED DOWN TO UNDER FLOOR AND CAPPED FOR NEW CONNECTION.
3. EXISTING FIRE STANDPIPE BRANCH TO BE DEMOLISHED BACK TO MAIN BRANCH AND CAPPED FOR FUTURE CONNECTIONS.
4. EXISTING FIRE HOSE CABINET TO BE REMOVED

TO BE DEMOLISHED

LEVEL 2 - PLUMBING, DRAINAGE & FIRE PROTECTION - DEMOLITION

1 : 100

1 / M100

D 610x914

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TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
6	ISSUED FOR DEMOLITION TENDER	2022/05/13
5	ISSUED FOR TENDER	2022/01/19
4	ISSUED FOR PERMIT	2021/11/24
3	ISSUED FOR 75% CD	2021/11/23
2	ISSUED FOR 50% CD	2021/10/07
1	ISSUED FOR 25% CD	2021/09/24

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DRAWING TITLE:

LEVEL 2 PLUMBING, DRAINAGE & FIRE PROTECTION - DEMOLITION

DRAWN BY:	DATE:
KS	09/23/21
CHECKED BY:	SCALE:
DR	As indicated

PROJECT NO.: 20050

DRAWING NO.: **M100**

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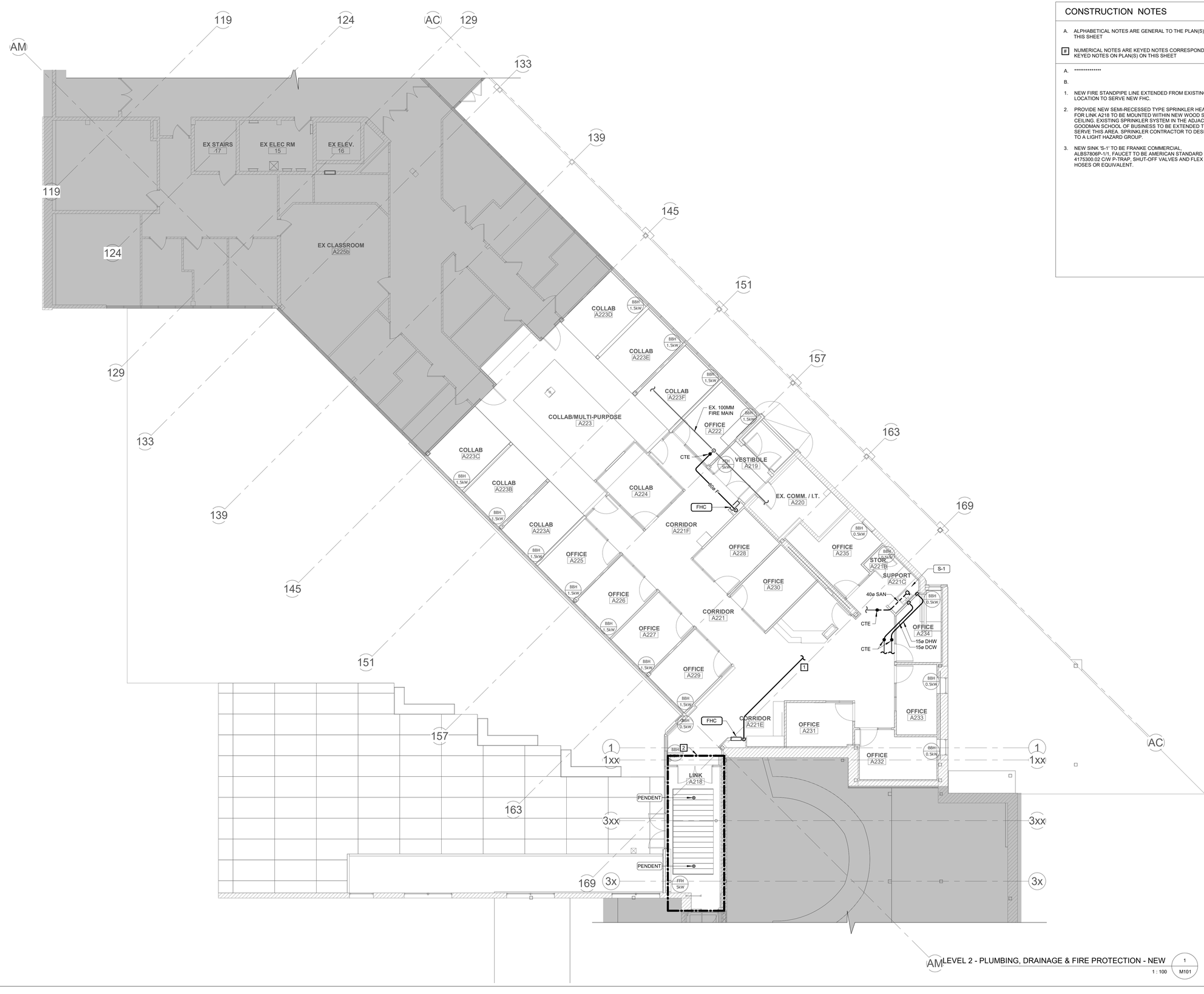

LEVEL 2 - PLUMBING, DRAINAGE & FIRE PROTECTION - NEW

1 : 100

M101

CONSTRUCTION NOTES

A. ALPHABETICAL NOTES ARE GENERAL TO THE PLAN(S) ON THIS SHEET

NUMERICAL NOTES ARE KEYED NOTES CORRESPONDING TO KEYED NOTES ON PLAN(S) ON THIS SHEET

A. **********

B.

1. NEW FIRE STANDPIPE LINE EXTENDED FROM EXISTING LOCATION TO SERVE NEW FHC.
2. PROVIDE NEW SEMI-RECESSED TYPE SPRINKLER HEADS FOR LINK A218 TO BE MOUNTED WITHIN NEW WOOD SLAT CEILING. EXISTING SPRINKLER SYSTEM IN THE ADJACENT GOODMAN SCHOOL OF BUSINESS TO BE EXTENDED TO SERVE THIS AREA. SPRINKLER CONTRACTOR TO DESIGN TO A LIGHT HAZARD GROUP.
3. NEW SINK 'S-1' TO BE FRANKE COMMERCIAL, ALBS7806P-1/1, FAUCET TO BE AMERICAN STANDARD 4175300.02 C/W P-TRAP, SHUT-OFF VALVES AND FLEX HOSES OR EQUIVALENT.

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
5	ISSUED FOR TENDER	2022/01/19
4	ISSUED FOR PERMIT	2021/11/24
3	ISSUED FOR 75% CD	2021/11/23
2	ISSUED FOR 50% CD	2021/10/07
1	ISSUED FOR 25% CD	2021/09/24

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DRAWING TITLE:

LEVEL 2 PLUMBING, DRAINAGE & FIRE PROTECTION - NEW

DRAWN BY:	DATE:
KS	09/23/21
CHECKED BY:	SCALE:
DR	As indicated

PROJECT NO.: 20050

DRAWING NO.: **M101**

FILENAME: 20050_MCA RENO_M_v21_detached.rvt
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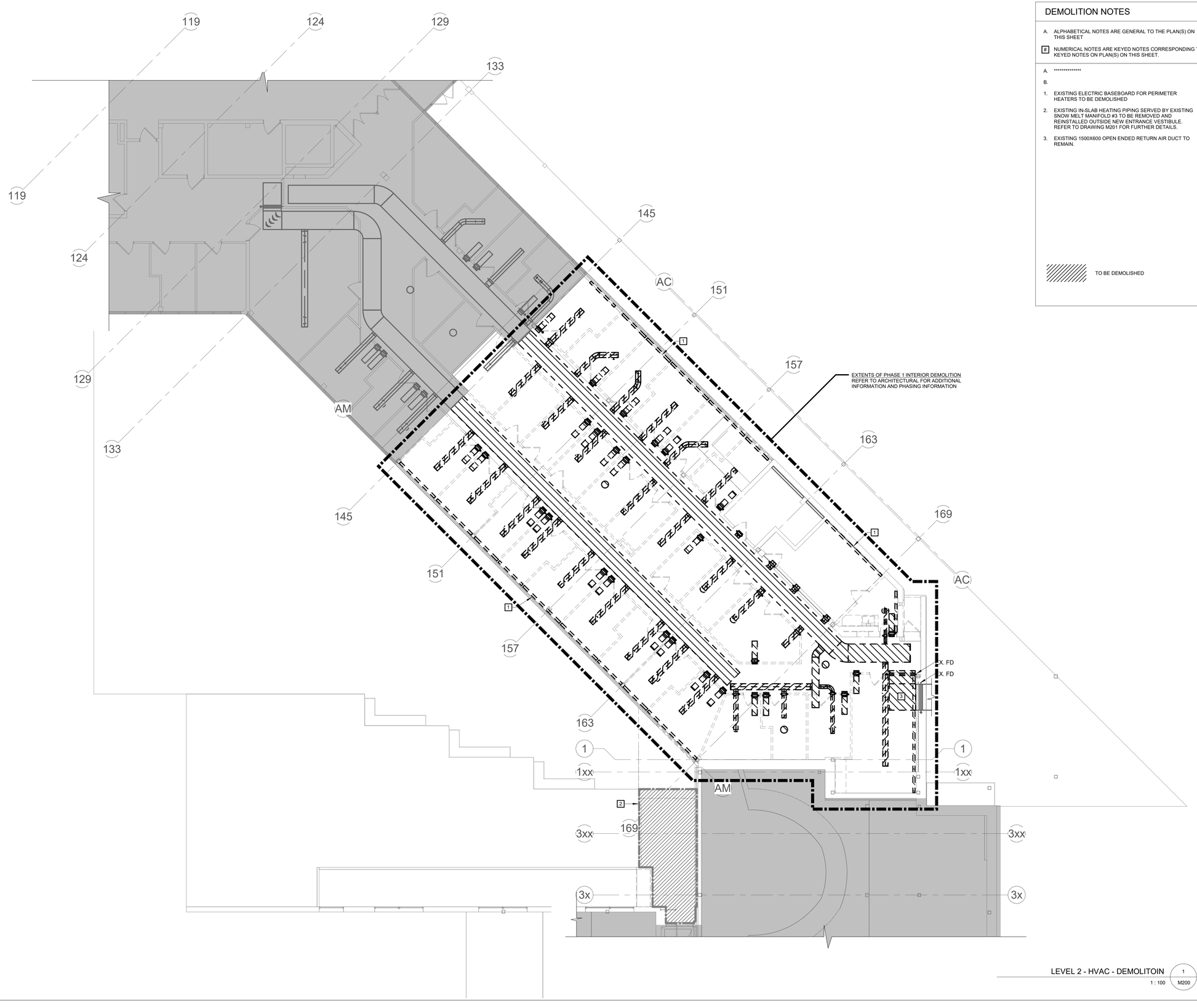

DEMOLITION NOTES

A. ALPHABETICAL NOTES ARE GENERAL TO THE PLAN(S) ON THIS SHEET

[#] NUMERICAL NOTES ARE KEYED NOTES CORRESPONDING TO KEYED NOTES ON PLAN(S) ON THIS SHEET.

A. ••••••••••••••

B.

1. EXISTING ELECTRIC BASEBOARD FOR PERIMETER HEATERS TO BE DEMOLISHED
2. EXISTING IN-SLAB HEATING PIPING SERVED BY EXISTING SNOW MELT MANIFOLD #3 TO BE REMOVED AND REINSTALLED OUTSIDE NEW ENTRANCE VESTIBULE. REFER TO DRAWING M201 FOR FURTHER DETAILS.
3. EXISTING 1500X600 OPEN ENDED RETURN AIR DUCT TO REMAIN.

TO BE DEMOLISHED

LEVEL 2 - HVAC - DEMOLITOIN
1 : 100
1 / M200

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
7	ISSUED FOR DEMOLITION TENDER	2022/05/13
6	ISSUED FOR TENDER	2022/01/19
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L2S 3A1

DRAWING TITLE:

LEVEL 2 HVAC - DEMOLITION

DRAWN BY:	DATE:
KS	07/19/21
CHECKED BY:	SCALE:
DR	As indicated

PROJECT NO.: 20050

DRAWING NO.: **M200**

FILENAME: 20050_AICA BRDHO_M_v21_detached.rvt
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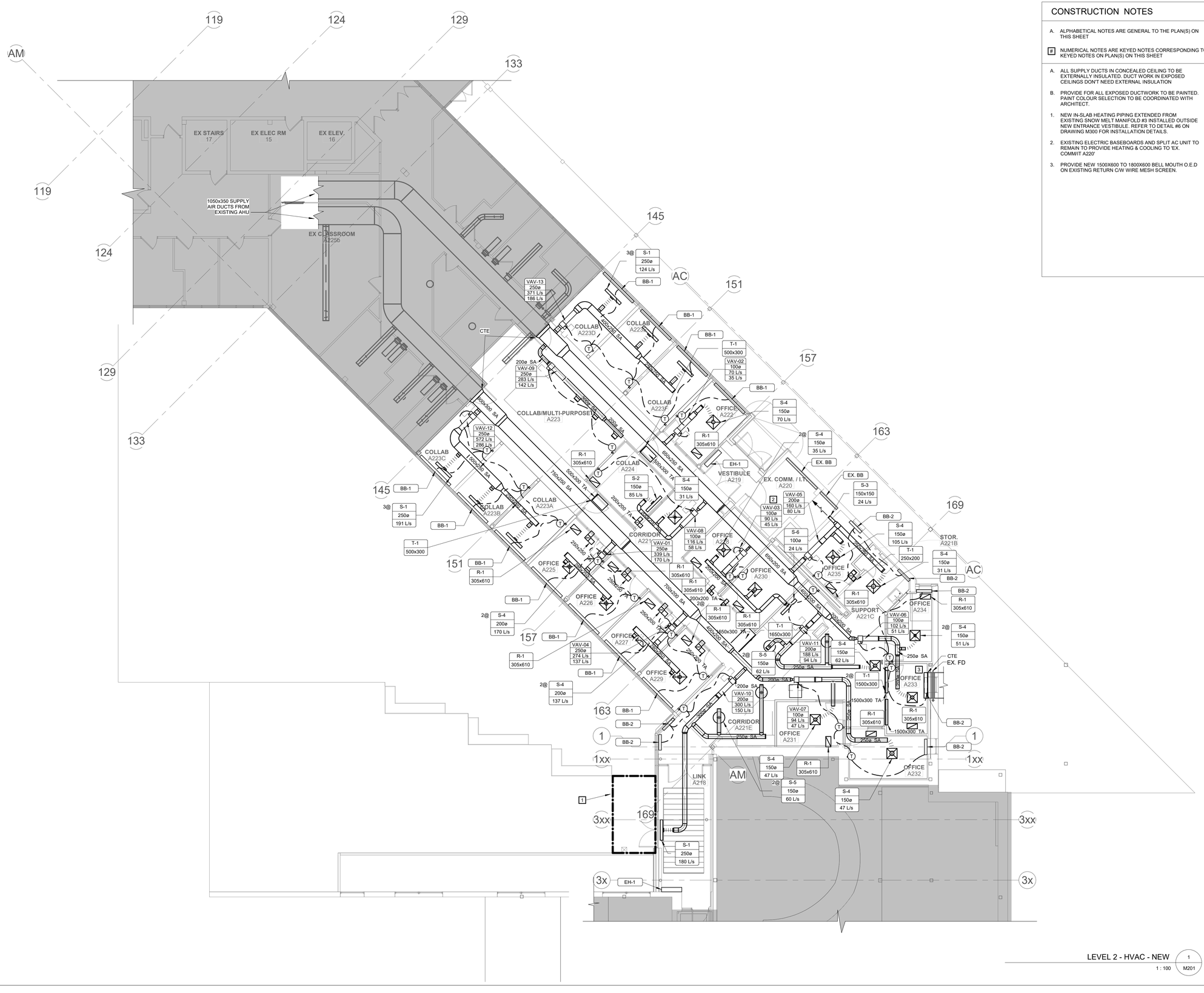
D 610x914



LEVEL 2 - HVAC - NEW (1)
1 : 100 (M201)

CONSTRUCTION NOTES

A. ALPHABETICAL NOTES ARE GENERAL TO THE PLAN(S) ON THIS SHEET

[#] NUMERICAL NOTES ARE KEYED NOTES CORRESPONDING TO KEYED NOTES ON PLAN(S) ON THIS SHEET

A. ALL SUPPLY DUCTS IN CONCEALED CEILING TO BE EXTERNALLY INSULATED. DUCT WORK IN EXPOSED CEILINGS DON'T NEED EXTERNAL INSULATION

B. PROVIDE FOR ALL EXPOSED DUCTWORK TO BE PAINTED. PAINT COLOUR SELECTION TO BE COORDINATED WITH ARCHITECT.

1. NEW IN-SLAB HEATING PIPING EXTENDED FROM EXISTING SNOW MELT MANIFOLD #3 INSTALLED OUTSIDE NEW ENTRANCE VESTIBULE. REFER TO DETAIL #6 ON DRAWING M300 FOR INSTALLATION DETAILS.

2. EXISTING ELECTRIC BASEBOARDS AND SPLIT AC UNIT TO REMAIN TO PROVIDE HEATING & COOLING TO 'EX. COMMIT A220'

3. PROVIDE NEW 1500X600 TO 1800X600 BELL MOUTH O.E.D ON EXISTING RETURN C/W WIRE MESH SCREEN.

Brock University

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TRUE NORTH

CONSTRUCTION NORTH

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1812 SIR ISAAC BROCK WAY
ST. CATHARINES, ON
L2S 3A1

DRAWING TITLE:

LEVEL 2 HVAC - NEW

DRAWN BY: KK	DATE: 02/07/20
CHECKED BY: DR	SCALE: As indicated

PROJECT NO.: 20050

DRAWING NO.: **M201**

FILENAME: 20050_MCA RENO_M_v21_detached.rvt
PLOTTED: 2022/01/19 8:48:17 AM

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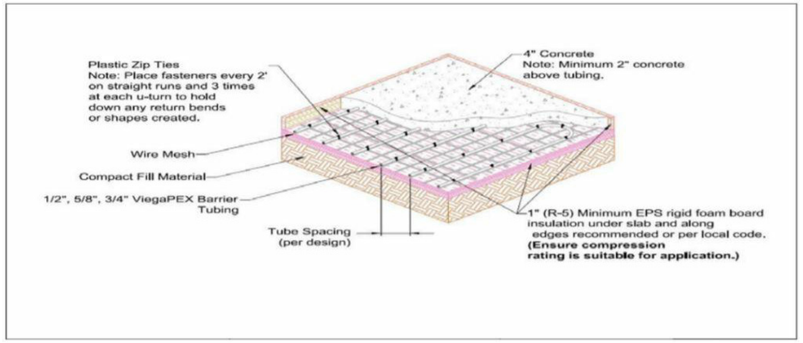


SNOW MELTING SYSTEM PIPE INSTALLATION DETAIL — 6 / M300

1 : 1

ELECTRICAL HEATER SCHEDULE

TAG	MFG.	MODEL	AIR FLOW		HEATING OUTPUT		ELECTRICAL				WEIGHT		NOTES
			L/s	CFM	kW	MBH	kW	V	PH	Hz	kg	lbs	
BB-1	OUELLET	OMB1406	0.0	0			0				0.00	0	
BB-2	OUELLET	OMB0528	0.0	0	0.5	2	0	0	1	0	0.00	0	
EH-1	OUELLET	OAC05038-T	0.0	0	5	17	0	0	1	0	0.00	0	

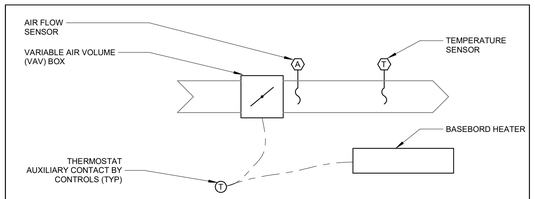
GRILLES, REGISTERS, & DIFFUSERS SCHEDULE

TYPE	MFG	MODEL	NOTES
R-1	E.H. PRICE	530/F/L/A/-	TBAR/DRYWALL MOUNTED, SIZE ON DRAWINGS
S-1	E.H. PRICE	SDS150/1500/2 SLOT	C/W SDB PLENUM, NECK SIZE ON DRAWINGS
S-2	E.H. PRICE	SDS150/1200/1 SLOT	C/W SDB PLENUM, NECK SIZE ON DRAWINGS
S-3	E.H. PRICE	510 SUPPLY GRILLE	DUCT/WALL MOUNTED, SIZE ON DRAWINGS
S-4	E.H. PRICE	SPD/F/L/A/-	NECK SIZE ON DRAWINGS
S-5	E.H. PRICE	RCD/-	DUCT MOUNTED/SUSPENDED, NECK SIZE ON DRAWINGS
S-6	E.H. PRICE	SDS50/900/1 SLOT	C/W SDB PLENUM, NECK SIZE ON DRAWINGS
T-1	E.H. PRICE	530/F/L/A/-	TRANSFER GRILLE/WALL MOUNTED, SIZE ON DRAWINGS

AIR TERMINAL UNIT SCHEDULE

NOTES
-UNITS SELECTED TO MEET NC 20 FOR DISCHARGE AND RADIATED NOISE PER AHRI 885-2008
-UNITS TO INCLUDE INTEGRAL 3 FOOT ATTENUATOR WITH PROTECTIVE SHROUD

TAG	SIZE	MFG	MODEL	AIR FLOW [L/s]		NOTES
				MIN.	MAX.	
VAV-01	250	E.H. PRICE	SDV8	170 L/s	339 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-02	100	E.H. PRICE	SDV4	35 L/s	70 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-03	100	E.H. PRICE	SDV4	45 L/s	90 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-04	250	E.H. PRICE	SDV8	137 L/s	274 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-05	200	E.H. PRICE	SDV6	80 L/s	160 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-06	100	E.H. PRICE	SDV4	51 L/s	102 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-07	100	E.H. PRICE	SDV4	47 L/s	94 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-08	100	E.H. PRICE	SDV4	58 L/s	116 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-09	250	E.H. PRICE	SDV8	142 L/s	283 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-10	200	E.H. PRICE	SDV6	150 L/s	300 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-11	200	E.H. PRICE	SDV6	94 L/s	188 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-12	250	E.H. PRICE	SDV10	286 L/s	572 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR
VAV-13	250	E.H. PRICE	SDV8	186 L/s	371 L/s	C/W CONTROLS & 900MM SOUND ATTENUATOR



SEQUENCE OF OPERATION

UNOCCUPIED:

- VAV DAMPER & ELECTRIC HEATING TO MODULATE TO MAINTAIN SPACE UNOCCUPIED SETPOINTS (HEATING = 65F, COOLING = 80F)

OCCUPIED COOLING:

- VAV DAMPER SHALL MODULATE TO MAINTAIN OCCUPIED COOLING SETPOINT (75F, ADJUSTABLE)

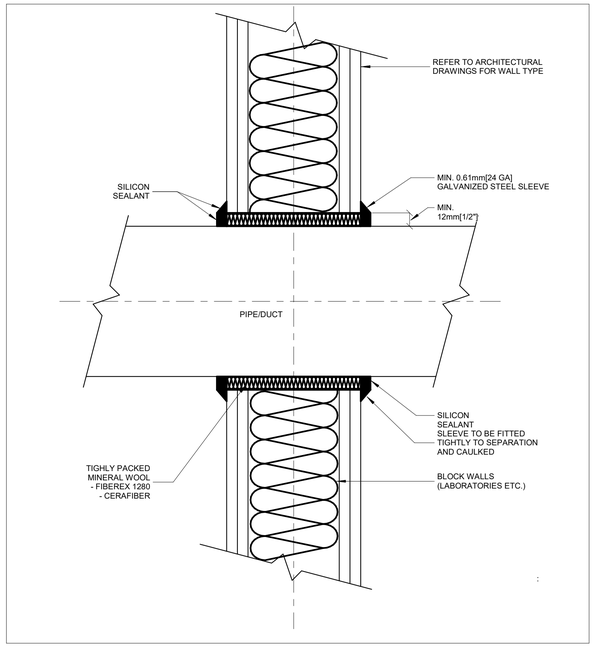
OCCUPIED HEATING:

- VAV DAMPER & ELECTRIC HEATING TO MODULATE TO MAINTAIN OCCUPIED SETPOINT (70F, ADJUSTABLE)
- VAV DAMPER TO MODULATE TO MINIMUM POSITIONS (50%) & ELECTRIC HEATING TO BE ENABLE WHEN SPACE TEMP DROPS BELOW SETPOINT.

THERMOSTAT CONTROL:

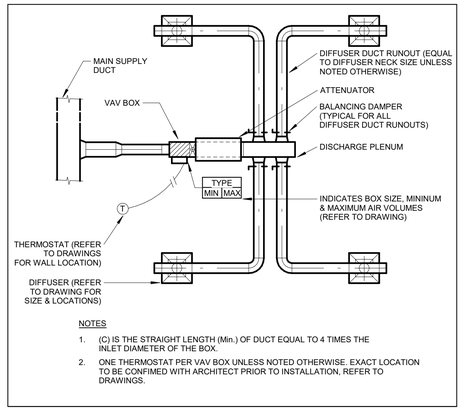
- ALL THERMOSTATS IN A CONTROL ZONE ARE AVERAGED. LOCAL TERMINAL UNITS FOR HEATING AND COOLING ARE COMMANDED BASED ON THE AVERAGED FEEDBACK RECEIVED FROM ALL THERMOSTATS IN THE CONTROL ZONE.

VAV CONTROL SCHEMATIC — 5 / M300



SERVICE PENETRATIONS THROUGH NON-RATED WALLS — 4 / M300

N.T.S.

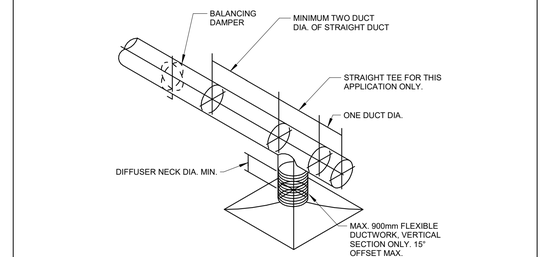


NOTES

1. (C) IS THE STRAIGHT LENGTH (Min.) OF DUCT EQUAL TO 4 TIMES THE INLET DIAMETER OF THE BOX.
2. ONE THERMOSTAT PER VAV BOX UNLESS NOTED OTHERWISE. EXACT LOCATION TO BE CONFIMED WITH ARCHITECT PRIOR TO INSTALLATION, REFER TO DRAWINGS.

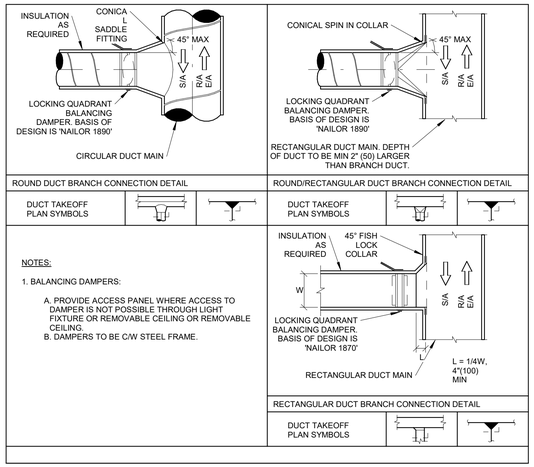
AIR VALVE INSTALLATION (NO RE-HEAT COIL) — 3 / M300

N.T.S.



TYPICAL SUPPLY DIFFUSER CONNECTION DETAIL — 2 / M300

N.T.S.



NOTES:

1. BALANCING DAMPERS:
   A. PROVIDE ACCESS PANEL WHERE ACCESS TO DAMPER IS NOT POSSIBLE THROUGH LIGHT FIXTURE OR REMOVABLE CEILING OR REMOVABLE CEILING.
   B. DAMPERS TO BE C/W STEEL FRAME.

DUCT BRANCH CONNECTION DETAIL — 1 / M300

N.T.S.

D 610x914

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
6	ISSUED FOR TENDER	2022/01/19
5	ISSUED FOR PERMIT	2021/11/24
4	ISSUED FOR 75% CD	2021/11/23
3	ISSUED FOR 50% CD	2021/10/07
2	ISSUED FOR 25% CD	2021/09/24
1	ISSUED FOR COSTING	2021/07/23

REVISIONS:

DISCREPANCIES MUST BE REPORTED IMMEDIATELY TO THE ENGINEER BEFORE PROCEEDING.
ONLY FIGURED DIMENSIONS MUST BE USED.
THE CONTRACTOR MUST CHECK THE DIMENSIONS ON SITE.

ALL DIMENSIONS ARE SHOWN IN MILLIMETERS.

DO NOT SCALE THE DRAWINGS.

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905.526.6700
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SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, LEVEL 2 - RENOVATION
1812 SIR ISAAC BROCK WAY
ST. CATHARINES, ON
L2S 3A1

DRAWING TITLE:

MECHANICAL DETAILS, SCHEDULES & CONTROL DIAGRAMS

DRAWN BY:	DATE:
KS	02/07/20
CHECKED BY:	SCALE:
DR	

PROJECT NO.: 20050

DRAWING NO.: **M300**

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SENSOR NOTES AND SCHEDULE

GENERAL NOTES:

1. ALL DEVICES AND SENSORS ARE TO HAVE SHOP DRAWINGS SUBMITTED TO THE CONSULTANT FOR REVIEW AND COMMENT PRIOR TO ORDERING.
2 ALL SENSORS ARE TO BE IN COMPLIANCE WITH NEMA WD 7-2011. ANY SENSORS NOT IN COMPLIANCE WILL BE REJECTED.
3 PROVIDE ALL SENSORS, POWER PACKS AND RELAY UNITS AS REQUIRED FOR A COMPLETE INSTALLATION. PASSIVE INFRARED SENSOR, ULTRASONIC AND MULTI TECHNOLOGY OCCUPANCY SENSORS SHALL BE AS NOTED BELOW (REFER TO PLANS FOR DEVICE LAYOUT). PART NUMBERS SHOWN ARE GENERAL, FOR DEVICE ONLY.
4 THIS CONTRACTOR SHALL ALLOW FOR ON SITE ADJUSTMENTS OF TIME DELAY, AIMING AND SENSITIVITY.
5 FINAL PLACEMENT OF SENSORS SHALL BE CONFIRMED ON SITE WITH ALL PIPING, DUCTWORK, EQUIPMENT, ETC. PRIOR TO ROUGH-IN, TO ENSURE CLEAR VIEW OF THE ENTRANCE DOOR AND THE OVERALL SPACE. THIS CONTRACTOR TO REFER TO AND FOLLOW MANUFACTURERS SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR PLACEMENT LOCATIONS AND SENSOR COVERAGE.
6 CEILING MOUNTED SENSORS SHALL BE AT AT CEILING LEVEL WHERE CEILING EXISTS. WHERE CEILING IS NOT PRESENT SENSORS TO BE MOUNTED AT HEIGHT OF PARTITIONS. WALL/CORNER MOUNTED SENSORS SHALL BE MOUNTED 8'-0" A.F.F. WALL STATION SENSORS SHALL BE AS PER SPECIFICATIONS AND STANDARD SWITCH LOCATIONS. ALL MOUNTING HEIGHTS ARE TO BE CONFIRMED ON SITE AND ADJUSTED ACCORDINGLY TO ENSURE PROPER COVERAGE.
7 APPROVED ALTERNATE BY: WATTSTOPPER, LUTRON, H-MOSS, SENSORSWITCH. SENSORS BEING SUBMITTED AS EQUALS SHALL MEET SPECIFIED CAPABILITIES, COVERAGE(S), SENSITIVITY ADJUSTMENT, TIME DELAYS, ETC. AS OUTLINED ABOVE AND AS PER SPECIFICATIONS. SHALL AN ALTERNATE FAIL TO MEET INTENT OF DESIGN, CONTRACTOR WILL BE RESPONSIBLE TO PROVIDE ADDITIONAL SENSORS AND OR PARTS TO MEET INTEND OF DESIGN AND FUNCTIONALITY.
8 ELECTRICAL CONTRACTOR SHALL ALLOW FOR TRAINING AND EXPLANATION OF CONTROLLED SYSTEMS TO END USER.
9 ELECTRICAL CONTRACTOR TO ENGAGE THIRD PARTY FOR FUNCTIONAL TESTING OF LIGHTING CONTROL DEVICES AND CONTROL SYSTEM AND PROVIDE CERTIFICATE OF ACCEPTANCE TO ENGINEER UPON COMPLETION PRIOR TO OCCUPANCY.
10 RE-COMMISSIONING - AFTER 30 DAYS FROM OCCUPANCY, REVISIT THE SITE AND RE-CALIBRATE ALL SENSORS FOR TIME DEILAYS AND SENSITIVITIES TO MEET OWNERS ONSITE REQUIREMENTS. PROVIDE A DETAILED REPORT OF RE-COMMISSIONING ACTIVITY AND ADJUSTMENTS MADE.

ITEM	DESCRIPTION
OS-1	WALL MOUNTED, DUAL-TECH, SINGLE RELAY SENSOR C/W 0-10V DIMMING CAPABILITY IN AREAS AS INDICATED. CONNECTED TO INDIVIDUAL LOADS IN AREAS ITS SERVING AND SET AS PER ORDER OF OPERATION. BUILT-IN PUSH BUTTON(S) SHALL ALLOW OCCUPANT TO RAISE/LOWER AND OVERRIDE CONTROLS TO TURN LOAD 'ON' OR 'OFF'. WATTSTOPPER CAT. No.: LMDW-100 SERIES OR APPROVED EQUAL
OS-2	CEILING MOUTNED, 360 DEGREE FIELD OF VIEW, DUAL-TECH SENSOR. WATTSTOPPER CAT. No.: LMDC-100 OR APPROVED EQUAL
OS-3	WHOLE ROOM SOLUTION CONSISTING OF WIRELESS CORNER MOUNTED PIR OCCUPANCY SENSOR, WIRELESS DIMMING CONTROLLER AND WIRELESS DIMMING WALL SWITCH. MOUNT SENSOR ON CEILING AND PROVIDE A SWITCH TO ALLOW ROOM OCCUPANT TO OVERRIDE LIGHTING CONTROLS. PROGRAM FOR MANUAL 'ON' OPERATION. WATTSTOPPER CAT. No.: LMPX-600 c/w LMRC-611-16M AND LMDM-601/LMSW-605 (INLCUDE ITUITIVE COMMISSIONING TOOL) OR APPROVED EQUAL
OS-4	WALL/CEILING (CORNER) MOUNTED, 120 DEGREE WIDE FIELD OF VIEW, DUAL-TECH SENSOR. PROVIDE COMPLETE WITH ROOM CONTROLLER AND LOW VOLTAGE SWITCHES AS SHOWN ON PLANS TO ALLOW USER OF THE SPACE TO CONTROL LIGHT LEVELS AND STATE ACCORDINGLY. SYSTEM TO BE COMPLETE WITH ALL REQUIRED WIRING AND RJ45 CONNECTORS. WATTSTOPPER CAT. No.: LMDX-100 OR APPROVED EQUAL

OCCUPANCY SENSOR SEQUENCE AND ORDER OF OPERATION

AREA	ORDER OF OPERATIONS
COLLABORATIVE SPACE	CONTROL VIA LOCAL OCCUPANCY SENSOR TO TURN LIGHTS ON, PROVIDE LOW VOLTAGE WIRELESS LIGHT SWITCH TO ALLOW SCENE PROGRAMMING, RAISE/LOWER, ON/OFF AS REQUIRED BY OCCUPANT. PROGRAM FOR LIGHTING TO TURN OFF AFTER 20 MINUTES OF UNOCCUPIED STATE.
CORRIDORS AND TRANSITION SPACES	LOCAL OCCUPANCY SENSOR TO TURN LIGHTS ON WHEN OCCUPANCY IS DETECTED AND TURN LIGHTS OFF AFTER 20 MINUTES. PROGRAM TO MAINTAIN LIGHTS 'ON' DURING REGULAR HOURS (CONFIRM WITH UNIVERSITY) AND SENSORS TO CONTROL LIGHTING DURING OTHER HOURS. MAINTAIN 1 FIXTURE IN EACH CORRIDOR ON NIGHT LIGHT CIRCUIT AND UNSWITCHED. PROVIDE EMERGENCY TRANSFER DEVICE AS NEEDED TO ALLOW LIGHTING CONTROL OF FIXTURES ON EMERGENCY SYSTEM DURING NORMAL OPERATION AND TRANSITION TO EMERGENCY AND CONTROL OVERRIDE DURING EMERGENCY STATE.
INDIVIDUAL COLLABORATIVE SPACE	LOCAL WIRELESS OCCUPANCY SENSOR/SWITCH TO TURN THE LIGHTS ON AND OFF AND ALLOW RAISE/LOWER OF LIGHT LEVELS WITHIN THE SPACE. OCCUPANCY SENSOR TO BE SET TO MANUAL ON AND TURN THE LIGHTS OFF AFTER 20 MINUTES OF UNUCCUPIED MODE
MULIPURPOSE SPACE	LIGHTING TO BE CONTROLLED VIA LOCAL LOW VOLTAGE SWITCHES AND SEPARATED INTO TWO (2) ZONES. LOCAL OCCUPANCY SENSOR TO BE PROGRAMMED FOR TIME DELAY OF 20 MINUTES. LOCAL LIGHTING SWITCH TO ALLOW USER TO RAISE/LOWER LIGHT LEVELS AS REQUIRED. PROVIDE EMERGENCY TRANSFER DEVICE AS NEEDED TO ALLOW LIGHTING CONTROL OF FIXTURES ON EMERGENCY SYSTEM DURING NORMAL OPERATION AND TRANSITION TO EMERGENCY AND CONTROL OVERRIDE DURING EMERGENCY STATE.
OFFICES	LOCAL WIRELESS OCCUPANCY SENSOR/SWITCH TO TURN THE LIGHTS ON AND OFF AND ALLOW RAISE/LOWER OF LIGHT LEVELS WITHIN THE SPACE. OCCUPANCY SENSOR TO BE SET TO MANUAL ON AND TURN THE LIGHTS OFF AFTER 20 MINUTES OF UNUCCUPIED MODE

EMERGENCY LIGHTING FIXTURE SCHEDULE

1. CONTRACTOR IS TO INCLUDE FOR ALL ACCESSORIES AS REQUIRED FOR A FULL AND COMPLETE INSTALLATION. PARTS NUMBERS SHOWN ARE GENERALLY FOR FIXTURE ONLY. REFER TO ARCHITECTURAL CEILING SCHEDULE FOR CEILING TYPES.
2. INSTALLATION OF EMERGENCY LIGHTING AND UNIT EQUIPMENT SHALL BE ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND ACCORDING TO CODE REQUIREMENTS.
3. EMERGENCY BATTERIES SHALL BE SIZED TO MAINTAIN CONNECTED LOAD FOR MINIMUM 1/2 HOUR.
4. FOR ALL EXIT SIGNS REFER TO FLOOR PLANS FOR SINGLE OR DOUBLE FACE, CEILING RECESSED OR WALL MOUNTED.
5. ALL EMERGENCY LIGHTING AND EQUIPMENT ARE TO HAVE SHOP DRAWINGS SUBMITTED TO THE CONSULTANT PRIOR TO ORDERING FOR APPROVAL. CONTRACTOR MUST INCLUDE SHOP DRAWINGS FOR ALL LAMPS BEING INSTALLED WITH FIXTURES.
6. EQUIPMENT BEING SUBMITTED AS AN APPROVED EQUAL ARE TO BE SUBMITTED TO THE CONSULTANT FOR APPROVAL NO LESS THAN 5 BUSINESS DAYS BEFORE CLOSING. SUBMITTALS SHALL BE CLEARLY LABELLED AND INCLUDE COMPLETE FIXTURE CUTS STATING INCLUDED OPTIONS AND ACCESSORIES. SUBMITTALS NOT MEETING THIS CRITERIA WILL BE REJECTED.
7. THE CONTRACTOR SHALL INCLUDE FOR TWO (2) SPARE EXIT SIGNS TO BE INSTALLED AS DIRECTED BY OWNER/ENGINEER/BUILDING OFFICIAL. UNUSED SPARE SIGNS SHALL BE TURNED OVER TO OWNER IF NOT REQUIRED.
8. PRIOR TO THE INSTALLATION OF EXIT SIGNS, THE CONTRACTOR SHALL COORDINATE WITH OTHER TRADES TO ENSURE THE EXIT SIGN(S) IS NOT OBSTRUCTED (IE BLOCKED BY BULKHEADS, LIGHTS, DUCTS, ETC). THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND REQUEST INSTRUCTION TO COMPLETE THE INSTALLATION SHOULD AN OBSTRUCTION BE PRESENT. THE SIGN IS TO BE CLEARLY VISABLE FROM A DISTANCE.

ITEM	DESCRIPTION
EXIT SIGN	SELF-POWERED EMERGENCY RUNNING MAN EXIT SIGN C/W DIRECTIONAL PICTOGRAMS FOR ON-SITE DIRECTION SELECTION. 1-1.5W LED 120VAC, 12VDC. REFER TO FLOOR PLANS FOR SINGLE OR DOUBLE FACE, CEILING RECESSED OR WALL MOUNT. AIMLITE 'RPALW' SERIES RPALW-x-M-WHT-BAT STANPRO 'RMXL' SERIES RMXLUWH-IB LUMACELL 'LA' SERIES LAXWS OR APPROVED EQUAL

LIGHTING FIXTURE NOTES

GENERAL NOTES:

1 CONTRACTOR IS TO INCLUDE FOR ALL ACCESSORIES AS REQUIRED FOR A FULL AND COMPLETE INSTALLATION. PARTS NUMBERS SHOWN ARE GENERALLY FOR FIXTURE ONLY. REFER TO ARCHITECTURAL CEILING SCHEDULE FOR CEILING TYPES AND PROVIDE REQUIRED ACCESSORIES (IE DRYWALL FLANGE KIT, ETC). DISCREPANCIES BETWEEN THE DESCRIPTION AND PART NUMBER SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO SUBMITTING A BID.
2 THE CONTRACTOR IS TO ALLOW FOR NORMAL DELIVERY ON FIXTURES (6-8 WEEKS FROM ACCEPTANCE OF SHOP DRAWINGS). FIXTURES FROM A QUICK SHIP PROGRAM WILL BE NOTED WHERE APPLICABLE. CONTRACTOR IS TO SUBMIT SHOP DRAWINGS FOR FIXTURES AS SOON AS POSSIBLE TO AVOID DELAY OF THE PROJECT. ALTERNATES WILL NOT BE ACCEPTED TO EXPEDITE A SCHEDULE.
3 PENDANT AND LINEAR FIXTURES SHOWN AS END TO END ARE TO BE ORDERED AS CONTINUOUS RUN FIXTURES UNLESS SPECIFICALLY NOTED OTHERWISE. FIXTURES ARE GENERALLY LISTED AS A MODULE TO CLARIFY THE BALLAST AND LAMP REQUIRED FOR EACH MODULE.
4 CONTRACTOR SHALL SUPPLY TO OWNER AND/OR CONSULTANT ANY DOCUMENTATION AS REQUIRED FOR OWNER TO APPLY FOR ENERGY INCENTIVES INCLUDING BUT NOT LIMITED TO BILLS OF SALE, ETC.
5 CONTRACTOR SHALL VERIFY AND INCLUDE FOR MULTIPLE BALLASTS REQUIRED FOR MULTIPLE SWITCHING.
6 ALL FIXTURES ARE TO HAVE SHOP DRAWINGS SUBMITTED TO THE CONSULTANT PRIOR TO ORDERING FOR GENERAL REVIEW. CONTRACTOR MUST INCLUDE SHOP DRAWINGS FOR ALL LAMPS BEING INSTALLED WITH FIXTURES.
7 ALL FIXTURES TO BE 4100K.
8 DIMMERS SHALL BE COMPATIBLE WITH LIGHT FIXTURE AND BE CAPABLE OF 0-100% OPERATION. ELV DIMMERS TO BE PROVIDED FOR ELECTRONIC OR LED FIXTURES. DIMMER SHALL BE BY LUTRON OR APPROVED EQUAL.
9 FIXTURES BEING SUBMITTED AS AN APPROVED EQUAL ARE TO BE SUBMITTED TO THE CONSULTANT FOR APPROVAL NO LESS THAN 5 BUSINESS DAYS BEFORE CLOSING. SUBMITTALS SHALL BE CLEARLY LABELLED AND INCLUDE COMPLETE FIXTURE CUTS STATING INCLUDED OPTIONS, ACCESSORIES AND FIXTURE EFFICIENCY. SUBMITTALS NOT MEETING THIS CRITERIA WILL BE REJECTED. IES FILES FOR FIXTURES MUST HAVE AN IES LAB CERTIFICATION.

ITEM	DESCRIPTION
A	RECESS MOUNTED ARCHITECTURAL 2x4 LED FIXTURE, EXTRUDED ALUMINUM HOUSING, PRECISSION FORMED OPTICAL ASSEMBLY WITH DIRECT OPTICAL DISTRIBUTION, 4000K, 1-10V ELECTRONIC DIMMING DRIVER FOR EXAMPLE – EATON LIGHTING METALUX CAT. 24EN LD2 45 UNV L840 CD1 U
B	2" APERATURE, RECESSED MOUNTED LED DOWNLIGHT FIXTURE C/W MEDIUM BEAM REFLECTOR, SELF-FLANGED AND SPECULAR CLEAR FINISH, ELECTRONIC 0-10V DIMMING DRIVER, 8W INPUT, 500 LUMENS, 4000K FOR EXAMPLE – EATON LIGHTING PORTFOLIO CAT. LD2B 5D010 EU2B 0510FL40 8040 2LBD1LI
C	4" APERATURE, RECESSED MOUNTED LED DOWNLIGHT FIXTURE C/W MEDIUM BEAM REFLECTOR, SELF-FLANGED AND SPECULAR CLEAR FINISH, ELECTRONIC 0-10V DIMMING DRIVER, 11W INPUT, 1000 LUMENS, 4000K FOR EXAMPLE – EATON LIGHTING PORTFOLIO CAT. LD4B10D010 EU4B10208040 4LM1LI
D6	RECESSED MOUNTED LINEAER LED 4" WIDE FIXTURE, HOUSING TO BE FROM EXTRUDED ALUMINUM WITH ILLUMINATED SECTIONS - 6 FEET LENGTH. FIXTURE TO BE COMPLETE WITH FLUSH SATIN DIFFUSER SNAP-IN LENS. HOUSING TO BE FINISHED IN HIGH REFLECTANCE WHITE WITH ELECTROSTATICALLY APPLIED POLYESTER POWDER COAT PAINT. DRIVER TO BE LONG LIFE LED SYSTEM TO DELIVER OPTIMAL PERFORMANCE, 4000K, 0-10V STANDARD ELECTRONIC DIMMING DRIVER. FOR EXAMPLE - EATON LIGHTING NEO-RAY CAT. S124DR S795D840 GYP6FO 1 UDD F W
E	4" APERTURE, SUSPENDED LED DOWNLIGHT CYLINDER STYLE FIXTURE C/W MEDIUM BEAM REFLECTOR, SPECULAR CLEAR FINISH, ELECTRONIC 0-10V DIMMING DRIVER, 11W INPUT, 1000 LUMENS, 4000K. FOR EXAMPLE - EATON LIGHTING PORTFOLIO CAT. LE4RB10D010TRx EC4B10208040 4LBM3LI c/w P436x
F	SURFACE MOUNTED 4' LED STRIP LIGHT FIXTURE. DIE FORMED COLD ROLLED STEEL CONSTRUCTION, 0-10V ELECTRONIC DIMMING DRIVER, 4000K. FOR EXAMPLE - EATON LIGHTING METALUX CAT. 4SNLED LD5 44SL LW UNV L840 CD1 U
G3	RECESSED MOUNTED LINEAER LED 4" WIDE FIXTURE, HOUSING TO BE FROM EXTRUDED ALUMINUM WITH ILLUMINATED SECTIONS 3' LENGTH. FIXTURE TO BE COMPLETE WITH FLUSH SATIN DIFFUSER SNAP-IN LENS. HOUSING TO BE FINISHED IN HIGH REFLECTANCE WHITE WITH ELECTROSTATICALLY APPLIED POLYESTER POWDER COAT PAINT. DRIVER TO BE LONG LIFE LED SYSTEM TO DELIVER OPTIMAL PERFORMANCE, 4000K, 0-10V STANDARD ELECTRONIC DIMMING DRIVER. FOR EXAMPLE - EATON LIGHTING NEO-RAY CAT. S124DR S795D840 GYP3FO 1 UDD F W
G4	SAME AS G3 ABOVE BUT 4' LENGTH. FOR EXAMPLE - EATON LIGHTING NEO-RAY CAT. S124DR S795D840 GYP4FO 1 UDD F W
G6	SAME AS G3 ABOVE BUT 6' LENGTH. FOR EXAMPLE - EATON LIGHTING NEO-RAY CAT. S124DR S795D840 GYP6FO 1 UDD F W

COMMUNICATIONS

SYMBOL	DESCRIPTION
	TELEPHONE OUTLET - CONDUIT (SEE SPECS) C/W CAT 6 CABLING AND RJ45 OUTLET
	COMPUTER OUTLET - CONDUIT (SEE SPECS) C/W CAT 6 CABLING AND RJ45 OUTLET
VOIP	VOIP PHONE OUTLET - CONDUIT (SEE SPECS) C/W CAT 6 CABLING AND RJ45 OUTLET
	COMBINATION TELEPHONE AND COMPUTER OUTLET CONDUIT (SEE SPECS) C/W 2x CAT 6 CABLING. 2x RJ45 OUTLETS
FAX	SPECIAL TELEPHONE OUTLET FOR FAX AND MODEM. CAT 6 CABLE AND RJ11 OUTLET. RUN SEPARATE LINE TO MAIN TERMINAL BOARD
	WIRELESS ACCESS POINT BACKBOX, FACEPLATE, CONDUIT (SEE SPECS) C/W CAT 6 CABLING AND RJ45 OUTLET
	COMBINATION TELEPHONE AND COMPUTER OUTLET FOR MODULAR FURNITURE. 2x CAT 6 CABLING. 1x RJ45 AND 1x RJ11 OUTLETS. FISH CABLING THROUGH FURNITURE AND TERMINATE AT DESK.
	COMPUTER OUTLET FOR MODULAR FURNITURE. CAT 6 CABLING AND RJ45 OUTLET. FISH CABLING THROUGH FURNITURE AND TERMINATE AT DESK
TV	CABLE TV OUTLET - 1" (25mm) CONDUIT C/W 2x CAT 6 CABLES AND 2x RJ45 OUTLETS
	IP CLOCK, SUPPLIED BY BROCK, INSTALLED BY THIS CONTRACTOR. RUN ALL CAT 6 CABLING TO IT CLOSET.
	COMMUNICATION DEVICES MOUNTED IN 2 CHANNEL RACEWAY
2	COMMUNICATION NOTES: NUMBER BESIDE THE OUTLET DENOTES NUMBER OF OUTLETS

SECURITY, ACCESS CONTROL, CCTV

SYMBOL	DESCRIPTION
	AREA TYPE BREAK GLASS DETECTOR
	SINGLE-PANE TYPE BREAK GLASS DETECTOR
	DOOR CONTACT
	ROLL-UP OR OVERHEAD DOOR CONTACT
K	ELECTRONIC KEY PAD
	MOTION DETECTOR
	PHOTO-ELECTRIC BEAM SOURCE
	PHOTO-ELECTRIC BEAM REFLECTOR
	SECURITY SYSTEM ALARM SIGNAL
	VIDEO MONITORING CAMERA
	POWER DOOR PUSH BUTTON OPERATOR
ADO	AUTOMATIC DOOR OPENER
C	CARD READER
ES	ELECTRIC STRIKE
MAG	MAGNETIC LOCK
OCC	OCCUPIED LIGHT CAMDEN LED ANNUNCIATOR CM-AF-500
PTR	PUSH TO RELEASE
PTL	PUSH TO LOCK CAMDEN PUSHBUTTON CM-400/8
REX	REQUEST TO EXIT
SP	SCRAMBLE PAD
W	HANDS FREE SWITCH CAMDEN SUREWAVE CM-324/3
PTH	POWER TRANSFER HINGE - PROVIDE ROUGH-IN TO ALLOW HARDWARE INSTALLER TO INSTALL ALL WIRING AND COMPONENTS
LCH	ELETRIFIED LATCH RETRACTON (WITHIN DOOR) - PROVIDE ROUGH-IN TO ALLOW HARDWARE INSTALLER TO INSTALL ALL WIRING AND COMPONENTS

PUBLIC ADDRESS SYSTEM AND INTERCOM

SYMBOL	DESCRIPTION
	CEILING MOUNTED SPEAKER
	WALL MOUNTED SPEAKER
M	MICROPHONE
	INTERCOM
V	VOLUME CONTROL

FIRE ALARM

SYMBOL	DESCRIPTION
S_P	PHOTOELECTRIC TYPE SMOKE DETECTOR
S_R	PHOTOELECTRIC TYPE SMOKE DETECTOR WITH A RELAY BASE
SS	PHOTOELECTRIC TYPE SMOKE ALARM, 120VAC WITH BATTERY BACKUP, INTERCONNECTED AS SHOWN
S_{ID}	PHOTOELECTRIC TYPE DUCT SMOKE DETECTOR
R	RATE OF RISE AND 57°C FIXED TEMPERATURE HEAT DETECTOR
F	92°C FIXED TEMPERATURE HEAT DETECTOR
F	MANUAL PULL STATION
ESV	ELECTRIC SUPERVISED VALVE
FS	FLOW SWITCH
PS	PRESSURE SWITCH
F_{SS}	FIRE ALARM SIGNALING APPLIANCE - SINGLE STROKE BELL
F_V	FIRE ALARM SIGNALING APPLIANCE - VIBRATING
F_H	FIRE ALARM SIGNALING APPLIANCE - HORN
	FIRE ALARM SIGNALING APPLIANCE - STROBE
	FIRE ALARM SIGNALING APPLIANCE - COMBINATION HORN AND STROBE
	FIRE ALARM DOOR RELEASE DEVICE
S	FIRE ALARM SPEAKER - WALL/COLUMN MOUNT
S_C	FIRE ALARM SPEAKER - CEILING MOUNT
	FIRE FIGHTERS HANDSET
FAA	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
CO	CARBON MONOXIDE DETECTOR

LIGHTING FIXTURES

SYMBOL	DESCRIPTION
	SURFACE OR RECESS MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE.
	SURFACE OR RECESS MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE.
	SURFACE OR RECESS MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE.
	SURFACE OR RECESS MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE.
	WALL OR COLUMN MOUNTED LIGHTING FIXTURES. LETTER DENOTES TYPE.
	WALL OR COLUMN MOUNTED LIGHTING FIXTURES ON AN EMERGENCY OR NIGHT LIGHT CIRCUIT. LETTER DENOTES TYPE.
	SURFACE OR SUSPENDED STRIP LIGHTING FIXTURE. LETTER DENOTES TYPE.
B-1-2	LIGHTING CIRCUITING NOTE. B-PANELBOARD I.D., 1-BRANCH CIRCUIT, 2-LOCAL (SWITCH) CIRCUIT.
	SWITCH. SINGLE-POLE, SINGLE-THROW
	CEILING MOUNTED OCCUPANCY SENSOR. REFER TO SCHEDULE FOR TYPE
	WALL MOUNTED OCCUPANCY SENSOR. REFER TO SCHEDULE FOR TYPE
B-1-2 XX	TYPICAL SWITCH NOTES. CIRCUITING: B-PANEL BOARD I.D., 1-BRANCH CIRCUIT, 2-LOCAL (SWITCH) CIRCUIT. XX-SUBSCRIPT(S): E-EMERGENCY POWER, D-DIMMING,LV-LOW VOLTAGE WALLSTATION P-PILOT LIGHT, 3-THREE WAY, 4-FOUR WAY, VS-VACANCY SENSOR, WP-WEATHERPROOF

EMERGENCY LIGHTING AND EXIT SIGNS

SYMBOL	DESCRIPTION
	SURFACE MOUNTED EMERGENCY LIGHTING FIXTURE
	RECESSED EMERGENCY LIGHTING FIXTURE
	EXIT/'RUNNING MAN' PICTOGRAM SIGN
	EMERGENCY LIGHTING FIXTURE AND BATTERY
	EMERGENCY LIGHTING FIXTURE, BATTERY AND EXIT SIGN
DC-X	DC - DENOTES A SOURCE OF DC POWER X - DENOTES POWER SOURCE IDENTIFICATION
X-2	DC POWER CIRCUITING NOTE: X - DC POWER SOURCE IDENTIFICATION 2 - BRANCH CIRCUIT

LEGEND

THIS LEGEND REPRESENTS THE SYMBOLS COMMONLY USED. NOT ALL SYMBOLS MAY APPEAR ON THE DRAWINGS. SHOULD A SYMBOL BE FOUND ON THE DRAWING AND NOT APPEARING ON THE LEGEND, THE CONTRACTOR SHALL SUBMIT A QUESTION TO HAVE THE SYMBOL CLARIFIED IN AN ADDENDUM PRIOR TO SUBMITTING A BID.

ABBREVIATIONS

20A	DENOTES 5-20R DEVICE
AC	ABOVE COUNTER
ADO	AUTOMATIC DOOR OPENER
AE	APPROVED EQUAL
AFF	ABOVE FINISHED FLOOR
AN	FIRE ALARM ANNUNCIATOR
BED	RECEPTACLE DEDICATED FOR PATIENT BED
BH	BASEBOARD HEATER
CB	CIRCUIT BREAKER
ER	EXISTING TO BE RELOCATED
EX	EXISTING TO REMAIN
FH	FORCED-AIR HEATER
GFI	EQUIPMENT SO NOTED TO BE SUPPLIED WITH A GROUND FAULT CIRCUIT INTERRUPTER
HSKP	HOUSEKEEPING
JB	JUNCTION BOX
PD	POWER DOOR
R	RELAY WITH AUXILIARY CONTACTS
REL	RELOCATED ITEM IN NEW LOCATION
REM	EXISTING TO BE REMOVED IN IT'S ENTIRETY
T	TRANSFORMER
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
W	WALL MOUNT - VERIFY HEIGHT
WP	EQUIPMENT SO NOTED TO BE SUPPLIED WITH THE MANUFACTURER'S WEATHER-PROOFING OPTION(S)

POWER LAYOUT

SYMBOL	DESCRIPTION
	DISCONNECT SWITCH (DS)
	COMBINATION STARTER (CS)
	MAGNETIC STARTER (MG)
	MANUAL STARTER (CS)
	POWER PANEL
	POWER TRANSFORMER
	ELECTRIC HEATING EQUIPMENT
	EQUIPMENT SUPPLIED BY OTHERS REQUIRING ELECTRICAL POWER CONNECTION REFER TO EQUIPMENT SCHEDULE
	EQUIPMENT SUPPLIED BY OTHERS REQUIRING ELECTRICAL POWER CONNECTION REFER TO OWNER EQUIPMENT SCHEDULE
	ALL MODES OF OPERATION OF EQUIPMENT SO NOTED TO BE SHUT DOWN BY THE ALARM CONDITION OF THE FIRE ALARM CONTROL PANEL
	PUSH BUTTON
	PUSH BUTTON STATION
T	THERMOSTAT
T	TIME CLOCK
J	JIFFY POLE
	120V HARDWIRE CONNECTION
	208V, 1Ø HARDWIRE CONNECTION
	208V, 3Ø HARDWIRE CONNECTION
	600V, 3Ø HARDWIRE CONNECTION
JB	JUNCTION BOX
H	HAND DRYER
	FLOOR BOX

WIRING DEVICES

SYMBOL	DESCRIPTION
	SPECIAL RECEPTACLE. REFER TO NOTES OR DESCRIPTION FOR TYPE
	125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP SIMPLEX UNO.
	125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX UNO.
	125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE HALF-SWITCHED RECEPTACLE. 15 AMP DUPLEX CONTROLLED VIA LOCAL SWITCH
	2x 125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX UNO
	125/250 VOLT, 3-POLE, 4-WIRE, STRAIGHT BLADE RECEPTACLE, AMPERAGE AS NOTED
	125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX UNO ON EMERGENCY OR UPS POWER
	VERTICAL LINE THROUGH ANY RECEPTACLE SYMBOL INDICATES A NON-STANDARD MOUNTING HEIGHT THAT MUST BE FIELD DETERMINED
	125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX FOR SYSTEMS FURNITURE
	125 VOLT, 2-POLE, 3-WIRE, STRAIGHT BLADE RECEPTACLE. 15 AMP DUPLEX FOR SYSTEMS FURNITURE ON EMERGENCY OR UPS POWER
	RECEPTACLES MOUNTED IN 2 CHANNEL RACEWAY
B-1 XX	TYPICAL RECEPTACLE NOTES: CIRCUITING: B-PANELBOARD I.D., 1-BRANCH CIRCUIT. SUBSCRIPT: XX-CURRENT RATING (IF NOTED).

GENERAL NOTES

1. THE ELECTRICAL DRAWINGS REPRESENT A PORTION OF THE CONTRACT. THE CONTRACTOR IS TO FAMILIARIZE THEMSELF WITH ALL OF THE DRAWINGS IN THE PACKAGE AS SOME WORK MAY BE SHOWN ON OTHER DRAWINGS IN THE PACKAGE. CONTRACTOR IS TO DETERMINE FULL EXTENT OF PROJECT PRIOR TO SUBMITTING BID.
2. THE DRAWINGS ARE NOT TO BE SCALED FOR INSTALLATION PURPOSES. ALL MEASUREMENTS ARE TO BE OBTAINED FROM ARCHITECTURAL PLANS, ELEVATIONS, SHOP DRAWINGS OR BE OBTAINED FROM FIELD MEASUREMENTS.
3. CONTRACTOR IS TO REVIEW ARCHITECTURAL DRAWINGS AND PROVIDE ALL NECESSARY PARTS AND ACCESSORIES AND FIRESTOPPING AS REQUIRED TO CONFORM WITH ARCHITECTURAL FIRE RATINGS.
4. CONTRACTOR IS TO REMOVE ALL EXISTING DEAD AND ABANDONED CONDUIT AND WIRING BACK TO SOURCE. WHERE NOT POSSIBLE TO REMOVE EXISTING CONDUIT, CONDUIT IS TO BE LEFT BEHIND AND EXISTING WIRE IS TO BE REMOVED AND REPLACED WITH A PULL ROPE.
5. CONTRACTOR IS TO PROVIDE ELECTRONIC REVIT 'AS-BUILT' DRAWINGS IN .RVT AND PDF FORMAT AT THE COMPLETION OF THE PROJECT. VERSION OF REVIT FILES TO BE CONFIRMED WITH PRIME CONSULTANT AND PROVIDED TO MATCH ACCORDINGLY.
6. UNLESS NOTED OTHERWISE ALL WIRING SHALL BE IN CONDUIT AND CONCEALED IN WALLS AND CEILING SPACES. BX IS PERMITTED IN SPECIAL CIRCUMSTANCES AND SHORT DROPS FROM JUNCTION BOXES TO LIGHT FIXTURES, REFER TO SPECIFICATIONS. CONDUIT RUNS ARE TO BE PARALLEL TO WALL STUDS AND DROP FROM JUNCTION BOXES MOUNTED IN THE CEILING SPACE. HORIZONTAL RUNS IN WALLS WILL ONLY BE ACCEPTED UNDER SPECIAL CIRCUMSTANCES (IE OFFEST TO AVOID STRUCTURAL ABOVE) WITH WRITTEN APPROVAL FROM THE OWNER/CONSULTANT.
7. ALL DATA/COMM WIRING FROM EACH OUTLET IS TO BE PROVIDED IN MIN. 1" (25mm) CONDUITS FROM OUTLET TO THE SOURCE (RACK AND/OR BIX BLOCK). CONTRACTOR CAN GROUP CABLING AND INSTALL A LARGER RUN BACK TO THE SOURCE. WHERE CABLE IS PERMITTED TO RUN FREE-AIR; A CONDUIT SHALL BE INSTALLED FROM THE OUTLET INTO AN ACCESSIBLE CEILING SPACE. PROVIDE BUSHINGS AT TOP OF WALL AND TRANSITION TO J-HOOKS (WITHIN ROOM) OR CABLE TRAY (AT CORRIDOR). CABLE IS NOT PERMITTED TO BE LAYING ON CEILING. COMM WIRING SHALL BE IN CONDUIT FOR ALL EXPOSED AREAS. FREE AIR COMM WIRING TRANSITIONING FROM ACCESSIBLE CEILINGS TO EXPOSED CEILINGS SHALL BE IN CONDUIT THROUGHOUT THE EXPOSED AREA. PROVIDE 12" (300mm) STUBS INTO THE EXPOSED AREAS WITH BUSHINGS. CONDUIT SHALL NOT EXCEED 40% FILL.
8. UNLESS SPECIFICALLY NOTED AS "CABLING BY OTHERS", THE CONTRACTOR SHALL INCLUDE FOR ALL CABLING TO DEVICES, OUTLETS, ETC AS SHOWN FOR A COMPLETE AND FUNCTIONING SYSTEM(S).
9. CONTRACTOR IS TO MAINTAIN POWER AND COMMUNICATION CIRCUITS IN AREAS OUTSIDE OF THE CONSTRUCTION AREA. PROVIDE TEMPORARY CONNECTIONS AS REQUIRED, COORDINATE WITH OWNER.
10. EQUIPMENT BEING REMOVED AND NOT BEING REUSED REMAIN THE PROPERTY OF THE OWNER AND IS TO BE STORED ON SITE. ANY EQUIPMENT THE OWNER DEEMS NO INTEREST IN IS TO BE DISPOSED OF IN A LAWFUL AND SAFE MANNER BY THIS TRADE.
11. CONTRACTOR IS TO REFER TO ARCHITECTURAL PLANS AND CEILING LAYOUTS TO VERIFY THAT NO INTERFERENCES EXIST PRIOR TO THE INSTALLATION OF FIXTURES AND DEVICES IN WALLS AND CEILINGS.

DRAWING LIST

E000	GENERAL NOTES, LEGENDS, DRAWING LIST AND SCHEDULES
E050	SPECIFICATIONS
E200	LEVEL 2 LIGHTING
E300	LEVEL 2 POWER & SYSTEMS PLAN
E500	PANEL SCHEDULES
E501	PANEL SCHEDULES & SINGLE LINE DIAGRAM
E600	ELECTRICAL DETAILS
ED300	LEVEL 2 POWER & SYSTEMS DEMOLION PLAN

DEMOLITION NOTES

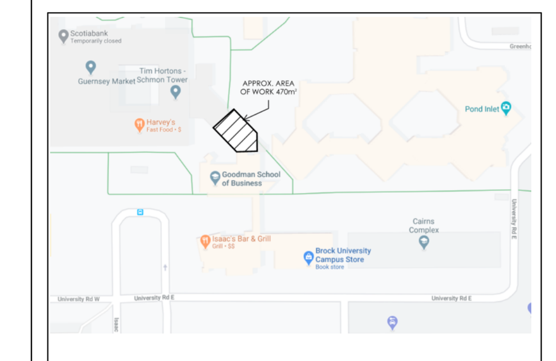
1. THE CONTRACTOR SHALL ARRANGE TO TOUR THE FACILITY WITH MAINTENANCE STAFF PRIOR TO SUBMITTING A BID ON THE PROJECT.
2. DURING THE CONTRACTORS SITE TOUR THEY SHALL BECOME FAMILIAR WITH THE EXISTING BUILDING CONSTRUCTION AND THE LOCATIONS OF THE EXISTING COMMUNICATION CLOSETS, LOCAL POWER PANELS, FIRE ALARM AND OTHER SYSTEMS BEING WORKED ON AS PART OF THIS CONTRACT.
3. THE CONTRACTOR AND MAINTENANCE STAFF SHALL OPEN EXISTING PANELS AND SYSTEMS TO BECOME FAMILIAR WITH THE EXISTING SYSTEMS AND TO DETERMINE THE FULL SCOPE OF WORK REQUIRED TO CARRY OUT THE PROJECT. THE CONTRACTOR SHALL PROVIDE NEW BREAKERS, DATA/VOICE COMPONENTS, FIRE ALARM DEVICES, LIGHTING SYSTEM COMPONENTS, ETC TO FACILITATE A COMPLETE AND FUNCTIONING SYSTEM AT PROJECT COMPLETION.
4. THE CONTRACTOR SHALL MEASURE OFF ANY DISTANCES NOT INDICATED FOR HOME RUNNING NEW SERVICES (POWER, FIRE ALARM, SECURITY ETC) AND INCLUDE MATERIALS AND LABOUR REQUIRED IN THEIR BID PRICE.
5. COORDINATE ALL DEMOLITION WITH GENERAL CONTRACTOR. EVERY EFFORT HAS BEEN MADE TO OUTLINE THE DEMOLITION SCOPE OF WORK, HOWEVER THE DEMOLITION DRAWINGS REPRESENT ONLY THE GENERAL LOCATION AND NUMBER OF FITTINGS, FIXTURES, DEVICES, EQUIPMENT ETC. TO ASSIST IN EVALUATING THE DEMOLITION SCOPE OF WORK. DRAWINGS ARE BASED ON PREVIOUS AS-BUILTS OR FIELD EVALUATIONS.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE DURING THE TENDER PERIOD TO DETERMINE THE EXACT SCOPE OF DEMOLITION WORK, QUANTITIES AND THOROUGHLY UNDERSTAND THE SITE CONDITIONS FOR CARRYING OUT THE SAME. REQUESTS FOR EXTRAS DUE TO FAILURE TO PROPERLY EVALUATE THE CONDITIONS THAT AFFECT DEMOLITION SCOPE OF WORK WILL NOT BE CONSIDERED.
7. THE CONTRACTOR SHALL SUBMIT QUESTIONS IN WRITING 5 DAYS PRIOR TO TENDER CLOSING TO ALLOW FOR QUESTIONS TO BE FORMALLY ANSWERED IN AN ADDENDUM.
8. UNLESS EXISTING CIRCUITS NUMBERS ARE INDICATED ON THE DEMOLITION PLANS, ALL CIRCUITS SHOWN ON THE NEW LAYOUTS ARE NEW CIRCUITS. EXCEPTIONS TO THIS INCLUDE CIRCUITS SHOWN ON THE DEMOLITION PLAN AND AGAIN ON THE NEW LAYOUT. THE CIRCUIT SHOWN BOTH TIMES IS EXISTING AND LOCALIZED IN THE AREA OF WORK. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING FOR ALL NEW CIRCUITS: NEW CONDUIT, WIRING, BREAKERS, SUPPORTS, BACKBOXES, FACEPLATES, RECEPTACLES, ETC FOR A COMPLETE SYSTEM.
9. EXISTING CIRCUITS BEING REUSED WILL BE INDICATED BY A CIRCUIT NUMBER (IE 2A15) OR A GENERIC NUMBER (IE CCT7). CCT 7 INDICATES THAT THE LIGHTING OR DEVICE IS TO BE CONNECTED TO 1 OF 7 EXISTING CIRCUITS IN THE AREA THAT HAS BECOME FREE AFTER DEMOLITION. THE CONTRACTOR SHALL BALANCE LOADS AND SHUFFLE BREAKERS AFTER THE PANEL LOADS HAVE BEEN CONNECTED TO EQUALLY LOAD EACH PHASE.
10. WHERE EXISTING LIGHTING CIRCUITS HAVE BEEN REUSED, CONTRACTOR SHALL VERIFY EXISTING VOLTAGE OF CIRCUITS PRIOR TO SUBMITTING ANY SHOP DRAWINGS OR ORDERING OF FIXTURES, SENSORS, CONTROLS, ETC. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES IN FIXTURE VOLTAGE AND EXISTING CIRCUIT VOLTAGE.

FIRE ALARM

1. ALL NEW FIRE ALARM DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH CAN/ULC S524.
2. FIRE ALARM DEVICES SHALL BE REVERIFIED IN ACCORDANCE WITH CAN/ULC S537.
3. FIRE ALARM GRAPHIC SHALL BE UPDATED IN ALL LOCATIONS TO REFLECT THE UPDATED LAYOUT OF THE FIRE ALARM SYSTEM.
4. CONNECT ALL ASSOCIATED ALARM, SUPERVISORY ZONE WIRING, AND SIGNAL CIRCUIT WIRING ETC TO FIRE ALARM PANEL.
5. ALL WIRING TO BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE ONTARIO ELECTRICAL SAFETY CODE.
6 WHERE FIRE PROTECTION AND LIFE SAFETY SYSTEMS, AND SYSTEMS WITH FIRE PROTECTION AND LIFE SAFETY FUNCTIONS ARE INTEGRATED WITH EACH OTHER; THE SYSTEMS SHALL BE TESTED AS A WHOLE IN ACCORDANCE WITH CAN/ULC-S1001, "INTEGRATED SYSTEMS TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS", TO VERIFY THAT THE SYSTEMS HAVE BEEN PROPERLY INTEGRATED.

Brock University

PROJECT LOGO



KEY PLAN

No.	DESCRIPTION	DATE
6	ISSUED FOR ADDENDUM	2022.02.22
5	ISSUED FOR TENDER	2022.01.19
4	ISSUED FOR 90% REVIEW	2021.12.07
3	ISSUED FOR PERMIT	2021.11.23
2	ISSUED FOR 50% REVIEW	2021.10.01
1	ISSUED FOR COSTING	2021.07.22

REVISIONS:

DO NOT SCALE THE DRAWINGS.

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SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
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L2S 3A1

DRAWING TITLE:

GENERAL NOTES, LEGENDS, DRAWING LIST AND SCHEDULES

DRAWN BY: AS	DATE: 2021.07.20
CHECKED BY: JR	SCALE: 1 : 100

PROJECT NO.: 20-115

DRAWING NO.: **E000**

FILENAME: C:\Users\Daryll\Documents\20-115 Brock MCA E_21_Daryll_Nicholls.rvt
PLOTDATE: 2022-02-22 4:38:41 PM

D 610x914

1. GENERAL
1. THIS SPECIFICATION SHALL APPLY TO AND GOVERN ALL WORK OF DIVISION 16. THE ELECTRICAL CONTRACTOR SHALL BE A SUBCONTRACTOR TO THE GENERAL CONTRACTOR AND HIS BID SHALL BE TENDERED DIRECTLY TO THE GENERAL CONTRACTOR. THE CONTRACTOR SHALL SUPPLY, INSTALL, WIRE AND CONNECT ALL EQUIPMENT, ACCESSORIES, DEVICES ETC SHOWN UNLESS SPECIFICALLY NOTED OTHERWISE. SHOULD THE CONTRACTOR BE UNSURE, THEY ARE TO SUBMIT A QUESTION 3 WORKING DAYS PRIOR TO TENDER CLOSE TO HAVE AN ADDENDUM ISSUED TO CLARIFY THE DEVICE, EQUIPMENT OR WORK SCOPE IN QUESTION.
2. IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN ALL DRAWINGS AND SPECIFICATIONS PRIOR TO TENDER SUBMITTAL. ELECTRICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ARCHITECTURAL, STRUCTURAL AND MECHANICAL DRAWINGS. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE DRAWINGS THAT CAUSES DOUBT AS TO THE TRUE MEANING OF INTENT OF THE DRAWINGS AND SPECIFICATIONS, A RULING SHALL BE OBTAINED FROM THE ENGINEER PRIOR TO TENDER SUBMITTAL. NO ALLOWANCE WILL BE MADE FOR FAILURE TO DO SO. IF CLARIFICATION CAN NOT BE OBTAINED IN TIME, THE CONTRACTOR SHALL INCLUDE FOR THE COSTLIER INSTALLATION IN THEIR BID.
3. LIABILITY INSURANCE:
1. OBTAIN AND CARRY PROPER INSURANCE TO FULLY PROTECT BOTH THE OWNER AND HIMSELF FROM ANY AND ALL CLAIMS DUE TO ACCIDENTS, MISFORTUNES, ACTS OF GOD, ETC.
4. CODES, PERMITS AND INSPECTION
1. BE RESPONSIBLE FOR AND OBTAIN ALL PERMITS, INSPECTION, ETC., AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION OVER THIS WORK AND PAY FOR ALL FEES RELATED TO SAME.
2. DELIVER ALL PERMITS TO THE ENGINEER AS SOON AS THEY BECOME AVAILABLE.
5. CLOSE OUT DOCUMENTS AND AS-BUILT DRAWINGS:
1. THE CONTRACTOR SHALL SUBMIT AN ENQUIRY TO THE ARCHITECT/OWNER TO OBTAIN THE FINAL ROOM NAMES AND NUMBERS TO BE USED IN ALL THE CLOSE OUT DOCUMENTS, REPORTS, FIRE ALARM/NURSE CALL PROGRAMMING, PANEL SCHEDULES ETC. FAILURE TO USE THE FINAL NAMES AND NUMBERS WILL REQUIRE THE CONTRACTOR TO REPLACE DOCUMENTATION/REPROGRAM AS REQUIRED AT THEIR EXPENSE. THEY SHALL KEEP A SEPARATE SET OF WHITE PRINTS ON THE SITE AND NOTE ALL CHANGES AND DEVIATIONS FROM THE ORIGINAL DESIGN. DEVICES ETC NOTED AS "EX" (EXISTING) AND "REL" RELOCATED ARE TO HAVE THE CIRCUIT TRACED AND DESIGNATED ON THE DRAWINGS. DEVICES ETC DESIGNATED AS CONNECT TO EXISTING CIRCUIT IN AREA ARE TO HAVE THE CIRCUIT INDICATED ON THE PLANS. PROVIDE AS-BUILT DRAWINGS IN AUTOCAD FORMAT (MIN. RELEASE 2010), PDF FORMAT AND (2) TWO SETS OF THESE PLANS SHOWING ALL AS-BUILT CONDITIONS TO THE OWNER AT THE COMPLETION OF THIS CONTRACT AND BEFORE APPLYING FOR FINAL PAYMENT. (INCLUDE IN-SLAB CONDUIT RUNS). SHOULD NO MARKUPS BE REQUIRED TENDER AND/OR SEALED PLANS BY THE ENGINEER WILL NOT BE ACCEPTED.
2. CLOSE OUT BINDERS SHALL BE PROVIDED WITH ALL TEST RESULTS, WARRANTY LETTERS AND SHOP DRAWINGS. A PDF COPY SHALL BE PROVIDED ALONG WITH THE HARD COPY VERSIONS. PDF VERSION SHALL BE ASSEMBLED VERSIONS WHERE POSSIBLE. SHOULD A DOCUMENT REQUIRE SCANNING, IT SHALL BE PROVIDED IN HIGH RESOLUTION AND BE CLEARLY LEGIBLE. ILLEGIBLE DOCUMENTS WILL NOT BE ACCEPTED.
6. CODES AND STANDARDS: (CURRENT EDITIONS)
1. DO COMPLETE INSTALLATION IN ACCORDANCE WITH C.S.A C22.1 EXCEPT WHERE SPECIFIED OTHERWISE.
2. COMPLY WITH C.S.A. ELECTRICAL BULLETINS IN FORCE AT TIME OF TENDER SUBMISSION, WHILE NOT IDENTIFIED AND SPECIFIED BY NUMBER IN THIS DIVISION, ARE TO BE CONSIDERED AS FORMING PART OF RELATED C.S.A. PART II STANDARD.
3. DO OVERHEAD AND UNDERGROUND SYSTEMS IN ACCORDANCE WITH C.S.A. C22.3 NO. 1 EXCEPT WHERE SPECIFIED OTHERWISE.
4. ABBREVIATIONS FOR ELECTRICAL TERMS: TO C.S.A. Z85.
5. COMPLY ALSO WITH THE FOLLOWING CODES:
1. ONTARIO ELECTRICAL SAFETY CODE
2. NATIONAL BUILDING CODE
3. ONTARIO BUILDING CODE
4. LOCAL HYDRO UTILITY REQUIREMENTS
5. CAN/ULC S524 AND S537
7. VISITING THE SITE:
1. VISIT THE SITE OF THE PROJECT AND BECOME FAMILIAR WITH THE SITE CONDITIONS. REPORT ANY DEVIATION AND/OR CONFLICTS BETWEEN TENDER DOCUMENTS AND SITE CONDITIONS PRIOR TO SUBMITTING TENDER.
8. LOCATION OF OUTLETS:
1. CHANGE LOCATION OF OUTLETS, EQUIPMENT AT NO EXTRA COST OR CREDIT, PROVIDING DISTANCE DOES NOT EXCEED 10'-0" (3m) AND INFORMATION IS GIVEN BEFORE INSTALLATION.
9. CUTTING AND PATCHING:
1. PROVIDE ALL CUTTING, PATCHING AND PAINTING FOR ELECTRICAL WORK, UNLESS NOTED OTHERWISE.
10. EQUIPMENT AND MATERIAL:
1. ALL EQUIPMENT AND MATERIAL, UNLESS SPECIFICALLY NOTED OTHERWISE, SHALL BE NEW AND WITHOUT BLEMISH OR DEFECT. ALL MATERIAL AND EQUIPMENT SHALL BEAR U.L.C. OR C.S.A. LABELS.
11. WARRANTY:
1. WARRANT ALL WORK AND APPARATUS INSTALLED UNDER THIS CONTRACT FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE OF SAME BY THE OWNER.
12. MAINTENANCE OF SERVICE:
1. PROVIDE ALL LABOUR AND MATERIALS NECESSARY TO ENSURE THAT POWER, LIGHTING AND ALL OTHER MISCELLANEOUS ELECTRICAL SERVICES ARE MAINTAINED IN FULL OPERATING CONDITION, IN ALL AREAS OF THE EXISTING BUILDING, DURING THE CONSTRUCTION PERIOD. DISCONNECT, MOVE, RELOCATE, AND RECONNECT CONDUIT AND WIRING AS NECESSARY TO ACCOMMODATE THE NEW WORK AND MECHANICAL INSTALLATION.
13. CLEANING
1. DO FINAL CLEANING.
2. AT TIME OF FINAL CLEANING, CLEAN EQUIPMENT SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT.
3. VACUUM INSIDE OF ALL PANEL BOARDS, ETC., ON COMPLETION OF THE PROJECT.
14. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES
1. SUBMIT SHOP DRAWINGS, PRODUCT DATA AND/OR SAMPLES FOR ALL EQUIPMENT, POWER DISTRIBUTION, POWER DEVICES, COMMUNICATIONS DEVICES, RACEWAY, LIGHT FIXTURES, EMERGENCY LIGHTING, ETC. THE DRAWINGS ARE TO BE REVIEWED AND STAMPED BY BOTH THE GENERAL AND ELECTRICAL CONTRACTOR PRIOR TO SUBMITTAL.
2. SHOP DRAWINGS SHALL INCLUDE ALL RELEVANT ACCESSORIES AND LAYOUTS WHERE REQUESTED.
3. SHOP DRAWINGS THAT ARE ILLEGIBLE AND OF POOR QUALITY WILL BE REJECTED.
4. SHOP DRAWINGS WILL BE REVIEWED AND RETURN MARKED "REVIEWED", "REVIEWED AS MODIFIED" OR "REVISE AND RESUBMIT". THE DRAWING REVIEW DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR ITS ACCURACY OR FOR COMPLIANCE WITH THE CONTRACT DOCUMENTS.
5. INSTALLATION OF ANY EQUIPMENT SHALL NOT START UNTIL AFTER FINAL REVIEW OF SHOP DRAWINGS BY THE CONSULTANT HAS BEEN OBTAINED.
6. INCOMPLETE OR INCORRECT SHOP DRAWINGS THAT ARE REJECTED, WHICH ADVERSELY CAUSE OR RESULT IN ANY DELAY OF THE DELIVER SCHEDULE OF ANY EQUIPMENT SHALL BE THE CONTRACTORS RESPONSIBILITY.
7. IF INCORRECT SHOP DRAWINGS ARE SUBMITTED AND REJECTED ANY SUBSEQUENT DELIVERY DELAY WILL RESULT IN THE CONTRACTOR PROVIDING TEMPORARY FACILITIES UNTIL SAID EQUIPMENT IS DELIVERED AND INSTALLED AT NO EXTRA COST TO THE OWNER.
8. PROVIDE SPACE FOR SHOP DRAWING REVIEW STAMPS FOR THE CONTRACTOR AND CONSULTANT. THIS SPACE SHALL BE CLEAR OF ALL TECHNICAL INFORMATION AND SHALL NOT BE ON THE BACK OF ANY SHEETS.
9. SUBMIT SHOP DRAWINGS IN DIGITAL (PDF) FORMAT.
10. ONE (1) ORIGINAL COPY IN DIGITAL FORMAT (PDF) WILL BE RETURNED. ALL COPIES REQUIRED BY TRADES, SUPPLIERS OR OTHER CONSULTANTS WILL BE PROVIDED AND/OR PRINTED BY THE CONTRACTOR.
11. FAILURE TO SUBMIT SHOP DRAWINGS WILL NOT RELIEVE THIS CONTRACTOR FROM ENSURING THAT ALL INSTALLED EQUIPMENT MEETS THE INTEND OF DESIGN DOCUMENTS. ALL COSTS ASSOCIATED WITH ANY ISSUES ASSOCIATED WITH ALTERNATE OR NOT SUBMITTED EQUIPMENT WILL THE RESPONSIBILITY OF THE INSTALLING CONTRACTOR.
12. SHOP DRAWING SUBMITTAL SHALL BE (BUT NOT LIMITED TO) FOR ANY EQUIPMENT AS LISTED;
1. HIGH VOLTAGE EQUIPMENT
2. SWITCHBOARD, METER CENTERS, PANEL BOARDS
3. FIRE ALARM SYSTEMS
4. LUMINAIRES INCLUDING LAMPS AND BALLASTS
5. LIGHTING CONTROLS
6. EMERGENCY BATTERY UNITS AND FIXTURES
7. ELECTRICAL HEATERS
8. SECURITY SYSTEM
9. MASTER CLOCK AND PROGRAM
10. INTERCOM SYSTEM
11. PUBLIC ADDRESS SYSTEM
12. MILLWORK
13. DEVICES
15. DRAW BREAKDOWNS:
1. THIS CONTRACTOR MUST SUBMIT A BREAKDOWN OF THE TENDER PRICE INTO SEPARATE CLASSIFICATION TO THE SATISFACTION OF THE CONSULTANT AND TOTALING THE TOTAL CONTRACT AMOUNT. EACH ITEM IS TO BE BROKEN INTO MATERIAL AND LABOUR COSTS.
2. PROGRESS DRAWS, WHEN SUBMITTED, ARE TO BE ITEMIZED AGAINST EACH OF THE DRAW BREAKDOWNS AND SHALL BE IN TABLE FORM IDENTIFYING CONTRACT AMOUNT, AMOUNT OF THIS DRAW, TOTAL TO DATE, PERCENTAGE COMPLETE AND BALANCE.
3. BREAKDOWN SHALL FOLLOW, BUT NOT BE LIMITED TO;
1. PERMITS AND FEES
2. MOBILIZATION
3. DEMOLITION
4. DISTRIBUTION EQUIPMENT (IE. SWITCHBOARDS, PANELBOARDS, ETC.)
5. INCOMING FEEDERS AND CONDUITS
6. BRANCH WIRING CONDUITS
7. BRANCH WIRING
8. MECHANICAL EQUIPMENT WIRING
9. FIRE ALARM DEVICES
10. FIRE ALARM WIRING
11. FIRE ALARM VERIFICATION AND CERTIFICATION
12. EXIT AND EMERGENCY LIGHTING
13. LIGHTING
14. LIGHTING CONTROLS
15. VOICE AND COMMUNICATION CONDUITS
16. VOICE AND COMMUNICATION WIRING AND TERMINATIONS
17. ACCESS CONTROL AND SECURITY
18. MISCELLANEOUS AND SPECIALTY EQUIPMENT (IE. PUBLIC ADDRESS, SOUND, ETC.)
4. ABOVE BREAKDOWN MUST BE APPROVED BY THE CONSULTANT PRIOR TO SUBMISSION OF THE FIRST DRAW, MOBILIZATION AMOUNT MAY ONLY BE DRAWN WHEN ALL REQUIRED SHOP DRAWINGS HAVE BEEN REVIEWED BY THE CONSULTANT
16. REVISIONS TO CONTRACT:
1. PROVIDE ITEMIZED LISTS OF MATERIALS/ASSOCIATED COSTS, LABOUR RATE/LABOUR FOR EACH ITEM, COPY OF MANUFACTURERS INVOICE, IF REQUESTED, FOR EACH ITEM GIVEN CHANGE NOTICE.
17. ROOF AND WALL OPENINGS:
1. LOCATION OF CONDUITS PASSING THROUGH ROOF AND WALLS TO BE COORDINATED WITH DIVISION 15. ALL OPENINGS TO BE MADE WATERTIGHT.
18. SCHEDULE OF CONSTRUCTION:
1. CONSULT GENERAL DIVISION FOR SCHEDULE OF CONSTRUCTION BEFORE COMMENCING WORK AND COORDINATE DETAILS WITH ENGINEER, OWNER AND ALL TRADES DURING CONSTRUCTION.
19. DIRECTORIES AND LABELLING:
1. IDENTIFY ALL ELECTRICAL EQUIPMENT. IDENTIFICATION SHALL CONSIST OF ENGRAVED LAMACOID NAMEPLATES HAVING BLACK BACKGROUND WITH WHITE LETTERS. FASTEN NAMEPLATES TO DEVICE USING SELF-TAPPING, COUNTERSUNK SCREWS. TAPE-TYPE NAMEPLATES WILL NOT BE ACCEPTED.
2. ALL RECEPTACLE COVER PLATES SHALL BE LABELED WITH TAPE-TYPE NAMEPLATES. THE LABEL SHALL INDICATE THE PANEL DESIGNATION AND CIRCUIT NUMBER. (IE A19). TAPE SHALL BE NEATLY TRIMMED ON EACH END AND PLACED PLUMB AND LEVEL ON THE FACE PLATE. LABELS SHALL HAVE A NEAT, CLEAN AND PROFESSIONAL APPEARANCE. LABELS NOT TRIMMED OR POORLY POSITIONED WILL NOT BE ACCEPTED.
3. ALL PANELS WITH CIRCUITS ADDED OR REMOVED SHALL HAVE NEW COMPUTER-GENERATED PANEL SCHEDULES PLACED IN THEM. SCHEDULE SHALL INDICATE PANEL DESIGNATION, WHERE PANEL IS FED FROM, VOLTAGE, PHASE, BRANCH CIRCUIT NUMBERS, BREAKER AMPERAGE AND CIRCUIT DESCRIPTION.
20. GROUNDING:
1. GROUND ALL EQUIPMENT IN ACCORDANCE WITH CODE REQUIREMENTS AND AS INDICATED.
2. GROUNDING CONDUCTORS: COPPER, INSULATED (GREEN); SIZE PER CODE.
3. GROUNDING LUGS, CONNECTORS: APPROVED GROUNDING TYPE.
4. ALL GROUND CONDUCTORS #8AWG OR SMALLER SHALL BE RUN IN EMT.
21. FIREPROOFING:
1. WHERE CABLES PASS THROUGH FLOORS OR FIRE RATED WALLS, PACK SPACE BETWEEN WIRING AND SLEEVE FULL WITH APPROVED RATED FIRE STOPS AND SEAL WITH CAULKING COMPOUND CONFORMING TO CGSB 19-GP-9Ma.
22. MOUNTING HEIGHTS:
1. MOUNTING HEIGHT OF EQUIPMENT IS FROM FINISHED FLOOR TO CENTRELINE OF EQUIPMENT UNLESS SPECIFIED OR INDICATED OTHERWISE.
2. IF MOUNTING HEIGHT OF EQUIPMENT IS NOT SPECIFIED OR INDICATED, VERIFY BEFORE PROCEEDING WITH INSTALLATION
3. INSTALL ELECTRICAL EQUIPMENT AS SPECIFIED IN THE OBC FOR BARRIER FREE DESIGN. IF NOT NOTED, INSTALL AT FOLLOWING CENTERLINE HEIGHTS:
1. LOCAL SWITCHES: 3'-5" (1050mm).
2. WALL RECEPTACLES:
1. GENERAL: 1'-6" (450mm).
2. ABOVE TOP OF CONTINUOUS BASEBOARD HEATER: 10" (250mm).
3. ABOVE TOP OF COUNTERS OR COUNTER SPLASH BACKS: 6" (150mm).
4. MECHANICAL ROOMS: 3'-5" (1050mm).
3. PANELBOARDS: AS REQUIRED BY CODE OR AS INDICATED.
4. TELEPHONE AND INTERPHONE OUTLETS: 1'-6" (450mm).
5. TELEVISION OUTLETS: 1'-6" (450mm).
6. FIRE ALARM PULL STATIONS: 3'-9" (1150mm).
23. LOAD BALANCE:
1. MEASURE PHASE CURRENT TO PANELBOARDS WITH NORMAL LOADS (LIGHTING) OPERATING AT TIME OF ACCEPTANCE. ADJUST BRANCH CIRCUIT CONNECTIONS AS REQUIRED TO OBTAIN BEST BALANCE OF CURRENT BETWEEN PHASES AND RECORD CHANGES.
2. MEASURE PHASE VOLTAGES AT LOADS AND ADJUST TRANSFORMER TAPS TO WITHIN 2% OF RATED VOLTAGE OF EQUIPMENT.
3. SUBMIT, AT COMPLETION OF WORK, REPORT LISTING PHASE AND NEUTRAL CURRENTS ON PANELBOARDS, DRY-CORE TRANSFORMERS AND MOTOR CONTROL CENTRES, OPERATING UNDER NORMAL LOAD. STATE HOUR AND DATE ON WHICH EACH LOAD WAS MEASURED, AND VOLTAGE AT TIME OF TEST.
24. SECURITY DOORS
1. THE CONTRACTOR SHALL INCLUDE FOR ALL WORK (CUTTING, PATCHING, CONDUIT, PULLING CABLE, EQUIPMENT, LICENCES, INSTALLATION, ETC) FOR SECURITY DOORS. MAGNETIC LOCK DOORS SHALL INCLUDE POWER FOR THE CONTROLLER AND CONDUIT/CABLING TO CONNECT TO THE KEY RESET SWITCH. CONFIRM LOCATION AND ROUTING PRIOR TO BID. ALL DOORS SHALL BE FULLY FUNCTIONAL AT COMPLETION OF PROJECT. WHERE SPECIFIED VENDORS ARE INDICATED, THE CONTRACTOR SHALL COORDINATE WITH THIS VENDOR AND INCLUDE FOR ALL WORK NOT IN THE SCOPE OF THE SPECIFIED VENDOR. CONTRACTOR SHALL MAKE ANY ADJUSTMENTS AFTER INSTALLATION AS REQUIRED BY THE OWNER.
2. REFER TO THE FIRE ALARM SECTION FOR VERIFICATION AND TESTING. DOORS SHALL BE TESTED AS A SYSTEM WITH THE FIRE ALARM AND OPERATION SHALL BE CONFIRMED PRIOR TO BRINGING CITY OFFICIALS, BUILDING OWNERS AND THE ENGINEER TO SITE TO WITNESS DOORS.
25. CONDUIT AND CABLE INSTALLATION:
1. INSTALL CONDUIT AND SLEEVES PRIOR TO POURING OF CONCRETE. SLEEVES THROUGH CONCRETE: SCHEDULE 40 STEEL PIPE, SIZED FOR FREE PASSAGE OF CONDUIT, AND PROTRUDING 2" (50mm).
2. IF PLASTIC SLEEVES ARE USED IN FIRE RATED WALLS OR FLOORS, REMOVE BEFORE CONDUIT INSTALLATION.
3. INSTALL CABLES, CONDUITS AND FITTINGS TO BE EMBEDDED OR PLASTERED OVER, NEATLY AND CLOSE TO BUILDING STRUCTURE SO FURRING CAN BE KEPT TO MINIMUM.
26. DEFINITIONS:
1. THE FOLLOWING ARE DEFINITIONS OF WORDS FOUND IN THE SPECIFICATION AND ON ASSOCIATED DRAWINGS:
1. "CONCEALED" - HIDDEN FROM NORMAL SIGHT IN FURRED IN SPACES, SHAFTS, CEILING SPACES, WALLS, UNDERFLOOR AND PARTITIONS.
2. "EXPOSED" - ALL ELECTRICAL WORK EXPOSED TO BUILDING OCCUPANTS. WIRE AND CABLING SHALL BE IN CONDUIT UNLESS SPECIFICALLY NOTED OTHERWISE.
3. "PROVIDE" (AND ALL TENSES OF "PROVIDE") SUPPLY, INSTALL, WIRE AND CONNECT COMPLETE.
4. "INSTALL" (AND ALL TENSES OF "INSTALL") INSTALL WIRE AND CONNECT COMPLETE, PRODUCTS AND SERVICES SPECIFIED.
5. "SUPPLY" SUPPLY ONLY
6. "OR APPROVED EQUAL" MATERIAL OR EQUIPMENT PROPOSED BY THE CONTRACTOR IN LIEU OF THAT SPECIFIED AS APPROVED BY THE CONSULTANT. MATERIAL OR EQUIPMENT SHALL MEET OR EXCEED THE SAME QUALITY, MATERIAL, EFFICIENCY, ETC AS THE SPECIFIED PRODUCTS.
7. "AS INDICATED" AS SHOWN ON DRAWINGS AND/OR NOTED IN SPECIFICATIONS.
27. MILLWORK
1. THE CONTRACTOR SHALL COORDINATE THE LOCATIONS OF THE ELECTRICAL DEVICES WITH THE MILLWORK DRAWINGS. THE CONTRACTOR SHALL REVIEW THE ARCHITECTURAL DRAWINGS AND SECTIONS FOR LOCATIONS OF MILLWORK PRIOR TO ROUGH-IN. THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
2. MILLWORK DRAWINGS SHALL INDICATE LOCATIONS OF ELECTRICAL OUTLETS, DEVICES ETC.
3. EXTRAS WILL NOT BE CONSIDERED FOR DEVICES INSTALLED IN THE INCORRECT LOCATION AND NOT INDICATED ON THE SHOP DRAWINGS. THE CONTRACTOR SHALL RELOCATE THAT DEVICE AT THEIR EXPENSE TO THE CORRECT LOCATION.
28. PHASING
1. THE CONTRACTOR SHALL REVIEW THE PHASING AS INDICATED ON ALL PLANS. THIS INCLUDES ARCHITECTURAL, MECHANICAL PLANS ETC IN THE ENTIRE DRAWING PACKAGE.
2. THE CONTRACTOR SHALL INCLUDE FOR TEMPORARY CONNECTIONS AS REQUIRED TO FACILITATE THE WORK.
3. THE CONTRACTOR SHALL INCLUDE FOR ALL WEEKEND AND PREMIUM TIME REQUIRED TO FACILITATE THE PHASING AS INDICATED IN THE PLANS PACKAGE.

2. PRODUCTS
1. ELECTRICAL EQUIPMENT
1. EQUIPMENT SHALL HAVE 1.0m (39") CLEARANCE IN FRONT OF SAID EQUIPMENT
2. ELECTRICAL EQUIPMENT RATED AT 1200A AND OVER SHALL HAVE 1.5m (59") CLEARANCE IN FRONT OF SAID EQUIPMENT.
3. ALL EQUIPMENT INSTALLED IN SPRINKLERED AREAS ARE TO BE COMPLETE WITH DRIP SHIELDS.
2. PANEL BOARDS
1. PANEL BOARDS: TO C.S.A. C22.2, NO. 29. LOADCENTRES ARE NOT ACCEPTABLE.
2. PANEL BOARDS ARE TO BE THE PRODUCT OF ONE (1) MANUFACTURER
3. 120/208V-3 PHASE-4 WIRE PANEL BOARDS: BUS AND BREAKERS RATED FOR MINIMUM 10,000A (SYMMETRICAL) INTERRUPTING CAPACITY OR AS INDICATED ON THE DRAWINGS.
4. MAIN BREAKER SHALL OCCUPY A SEPARATE COMPARTMENT FROM BRANCH BREAKERS. PANELS WITH MAIN BREAKERS IN BRANCH BREAKER COMPARTMENT WILL NOT BE ACCEPTED.
5. SEQUENCE PHASE BUSSING WITH ODD NUMBERED BREAKERS ON LEFT AND EVEN ON RIGHT, WITH EACH BREAKER IDENTIFIED BY PERMANENT NUMBER IDENTIFICATION AS TO CIRCUIT NUMBER.
6. PANEL BOARDS: MAINS, NUMBER OF CIRCUITS, AND NUMBER AND SIZE OF BRANCH CIRCUIT BREAKERS AS INDICATED
7. TWO (2) KEYS FOR EACH PANEL BOARD AND KEY PANEL BOARDS ALIKE.
8. COPPER BUS WITH FULL SIZE COPPER MAINS AND NEUTRAL.
9. MAINS FOR BOLT-ON BREAKERS.
10. FINISH TRIM AND DOOR BAKED GRAY ENAMEL. PAINT TUB SAME AS DOOR.
11. COMPLETE CIRCUIT DIRECTORY WITH TYPEWRITTEN LEGEND SHOWING CIRCUIT LABEL, AMPERAGE AND PANEL LOCATION UNDER PLASTIC COVER.
3. BREAKERS GENERAL
1. BOLT-ON MOLDED CASE CIRCUIT BREAKER, FULL MODULE (I.E. 1" MINIMUM WIDTH), QUICK-MAKE, QUICK-BREAK TYPE, FOR MANUAL AND AUTOMATIC OPERATION WITH TEMPERATURE COMPENSATION FOR 40OC AMBIENT. (MINI-BREAKERS NOT ACCEPTABLE)
2. MAGNETIC INSTANTANEOUS TRIP ELEMENTS IN CIRCUIT BREAKERS, TO OPERATE ONLY WHEN THE VALUE OF CURRENT REACHES SETTING.
4. DISCONNECT SWITCHES FUSED AND UNFUSE
1. ENCLOSED MANUAL AIR BREAK SWITCHES IN NON-HAZARDOUS LOCATIONS: TO C.S.A. C22.2 NO. 4.
2. FUSE HOLDER ASSEMBLIES TO C.S.A. C22.2 NO. 39.
3. FUSIBLE AND NON-FUSIBLE DISCONNECT SWITCHES AS INDICATED.
4. PROVISION FOR PADLOCKING IN ON/OFF SWITCH POSITION BY THREE LOCKS
5. MECHANICALLY-INTERLOCKED DOOR TO PREVENT OPENING WHEN HANDLE IN "ON" POSITION
6. QUICK-MAKE, QUICK-BREAK ACTION.
7. ON/OFF SWITCH POSITION INDICATION ON SWITCH ENCLOSURE COVER.
8. C.S.A. ENCLOSURE 1 UNLESS NOTED OTHERWISE.
9. EATON CUTLER HAMMER, SQUARE D, SIEMENS CANADA MANUFACTURE.
5. CONDUCTORS
1. ALL CONDUCTORS SHALL BE COPPER UNLESS INDICATED OTHERWISE.
2. CONDUCTORS #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #8 AND LARGER SHALL BE STRANDED.
3. CONDUCTORS SHALL BE SIZED #12 AWG MINIMUM, EXCEPT FOR CONTROL CIRCUITS WHERE #14 AWG MINIMUM SIZE IS PERMITTED. FEEDER SIZES AS INDICATED.
4. PANEL FEEDER LENGTHS SHALL BE CONTRACTOR VERIFIED FOR LENGTH OF PROPOSED INSTALLATION PATH SO AS NOT TO EXCEED 3% VOLTAGE DROP ON INSTALLATION. FEEDERS EXCEEDING THE LENGTH OF THE ALLOWABLE AMPACITY SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BEGINNING ANY ROUGH-INS.
5. SIZE CONDUCTORS FOR A 2% MAXIMUM VOLTAGE DROP FROM OVERCURRENT DEVICE TO FARTHEST OUTLET.
6. CONDUCTOR INSULATION RATED FOR 600V MINIMUM UNLESS STATED OTHERWISE.
7. CONDUCTOR TYPES:
1. TW75, TWU TO C.S.A. #C22.2 NO. 75
2. RW90, RWU90 (XLPE) TO C.S.A. #C22.2 NO. 38
3. TW75, RW90 (XLPE) - INSIDE BUILDING.
4. TWU, RWU90 (XLPE) - CONDUCTORS DIRECT BURIED OR IN CONDUIT OUTSIDE BUILDING.
5. BX (ARMOURED CABLE) IS ONLY PERMITTED FOR LIGHT FIXTURE DROPS IN ACCOUSTIC CEILINGS (MAX LENGTH 5'-0"), AND MAY BE USED IN HOLLOW PARTITIONS FOR SWITCH AND/OR RECEPTACLE. ANY DROPS SHALL NOT EXCEED 3.0m (10'-0"). AC-90 (BX ARMOURED CABLE) IS NOT TO BE INSTALLED IN OPEN CEILINGS OR ANY OTHER EXPOSED APPLICATION. ALL CABLES ARE TO BE PROPERLY FASTENED TO BUILDING STRUCTURE IN A NEAT AND PROFESSIONAL MANNER. USE OF AC-90 IN METAL STUD CONSTRUCTION HOLLOW PARTITION IS TO BE LIMITED TO A MAXIMUM OF 6.0m (20'-0"). EXCESSIVE USE OF AC-90, IN THE OPINION OF THE ENGINEER, WILL REQUIRE ELECTRICAL CONTRACTOR TO REPLACE ALL NEW WIRING WITH PROPER CONDUIT AND WIRE AT CONTRACTORS EXPENSE.
6. FASTENINGS AND SUPPORTS
1. SUPPORT EQUIPMENT, CONDUIT OR CABLES USING CLIPS, SPRING-LOADED BOLTS, CABLE CLAMPS DESIGNED AS ACCESSORIES TO BASIC CHANNEL MEMBERS.
2. INSTALL FASTENINGS AND SUPPORTS AS REQUIRED FOR EACH TYPE OF EQUIPMENT CABLES AND CONDUIT AND IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION.
7. CONDUITS
1. RIGID, GALVANIZED STEEL THREADED CONDUIT TO C.S.A. C22.2, NO. 45, SIZE AS INDICATED.
2. ELECTRICAL METALLIC TUBING (EMT) WITH COUPLINGS AND EXPANDED ENDS AS REQUIRED, TO C.S.A. C22.2, NO. 83, SIZE AS INDICATED.
3. RIGID PVC (UNPLASTICIZED) CONDUIT FOR EXPOSED, ABOVE GROUND WORK, TO C.S.A. C22.2, NO. 211.2, SIZE AS INDICATED. FLEXIBLE PVC IS NOT PERMITTED.
4. FLEXIBLE METAL CONDUIT AND LIQUID-TIGHT FLEXIBLE METAL CONDUIT TO C.S.A. C22.2, NO. 56.
5. EMT CONDUIT FITTINGS, IE. CONNECTORS, COUPLINGS, TO C.S.A. C22.2, NO. 18, ZINC-PLATED STEEL/MALLEABLE IRON CONSTRUCTION. ALL CONNECTIONS AND COUPLINGS TO BE SET SCREW TYPE, IE. CONCRETE TIGHT.
6. CONDUIT SIZES SHALL BE A MINIMUM OF 3/4" AND CONFORM TO ELECTRICAL SAFETY CODE. WHERE SIZES ARE INDICATED AND THEY EXCEED CODE, THEY SHALL NOT BE REDUCED.
7. USE RIGID, GALVANIZED STEEL, THREADED CONDUIT WHERE CONDUIT IS SUBJECT TO MECHANICAL INJURY.
8. RUN PARALLEL OR PERPENDICULAR TO BUILDING LINES.
9. USE EMT FOR ALL WIRING FROM OUTLET BOX TO SOURCE.
10. INSTALL NYLON FISH WIRE IN EMPTY CONDUITS AND TERMINATE UNDER SCREW LEAVING 12' SLACK. TAG FISH WIRE IDENTIFYING SYSTEM.
11. DO NOT LOCATE CONDUITS LESS THAN 3" (75 MM) PARALLEL TO STEAM OR HOT WATER LINES WITH A MINIMUM OF 1" (25 MM) AT CROSS-OVERS.
12. IN-SLAB CONDUIT: LOCATE TO SUIT REINFORCING STEEL. INSTALL IN CENTRE 1/2 OF SLAB.
13. PROVIDE AND INSTALL 4-38mm ((4) 1-1/2") SPARE CONDUITS UP TO CEILING SPACE FROM EACH FLUSH MOUNTED ELECTRICAL PANEL. TERMINATE IN 300mm X 300mm (12"x12") JUNCTION BOXES IN ACCESSIBLE CEILING SPACE.
8. JUNCTION AND PULL BOXES
1. WELDED STEEL CONSTRUCTION WIRE SCREW-ON FLAT COVERS FOR SURFACE MOUNTING.
2. COVERS WITH 1" (25 MM) MINIMUM EXTENSION ALL AROUND, FOR FLUSH-MOUNTED PULL AND JUNCTION BOXES.
3. INSTALL PULL BOXES IN CONDUIT RUNS SO AS NOT TO EXCEED 30m OF CONDUIT RUN OR THE EQUIVALENT OF TWO (2) 90° BENDS BETWEEN PULL BOXES.
9. OUTLET AND CONDUIT BOXES:
1. ALL LIGHTING FIXTURES, RECEPTACLES AND OTHER WIRING DEVICES FOR ANY CONDUIT SYSTEM SHOWN SHALL BE PROVIDED WITH AN OUTLET BOX.
2. 4" (102 MM) OCTAGON OR SQUARE OUTLET BOXES OR LARGER, COMPLETE WITH FITTINGS FOR LIGHTING FIXTURES AND AS REQUIRED FOR SPECIAL DEVICES.
3. WALL OUTLET BOXES SHALL BE:
1. NO. 1104 SERIES, FLUSH MOUNTED IN DRYWALL PARTITIONS, U.N.O.
2. MBS SERIES MASONRY BOXES (GALVANIZED STEEL) FLUSH MOUNTED IN MASONRY WALLS (BLOCK WALLS).
3. GANG BOXES SHALL BE USED AT LOCATIONS WHERE DEVICES ARE GROUPED. PROVIDE BARRIERS AS REQUIRED.
4. BLANK COVER PLATES FOR BOXES WITHOUT WIRING DEVICES.
10. WIRING DEVICES:
1. SUPPLY AND INSTALL WIRING DEVICES AS INDICATED COMPLETE WITH COVERPLATES.
2. SWITCHES: MANUALLY OPERATED, GENERAL PURPOSE, AC, SPECIFICATION GRADE, TOTALLY ENCLOSED BODY, RATED 120V, 20 AMPERES MINIMUM OR AS REQUIRED BY CIRCUIT COMPLETE WITH WHITE DECORATIVE DESIGNER SERIES TOGGLE. (ROCKER)
3. RECEPTACLES: 3 WIRE, U-GROUND TYPE, PREMIUM SPECIFICATION GRADE COMPLETE WITH SCREW-TYPE TERMINALS, DOUBLE WIRE CONTACTS, RIVETED GROUND CONTACTS, BREAK-OFF LINKS FOR SPLIT RECEPTACLES AND WHITE MOLDED HOUSING. RECEPTACLES WITHIN 1.5m OF A SINK ARE TO BE PROTECTED BY GFI. EXTERIOR RECEPTACLES ARE TO BE GFI AND INCLUDE "EXTRA DUTY IN USE" WEATHERPROOF COVER. HUBBELL CAT No. MM420C.
4. OTHER RECEPTACLES WITH AMPACITY AND VOLTAGE AS INDICATED.
5. PRODUCTS: DEVICES TO BE HUBBELL MANUFACTURE, STYLE LINE SERIES;
1. LIGHT SWITCH (STYLE LINE DECORATOR SERIES):
1. 20A-120V SINGLE POLE WHITE - DS120W
2. 20A-120V 3-WAY WHITE - DS320W
3. 20A-120V 4-WAY WHITE - DS420W
4. 20A-347V SINGLE POLE WHITE - COOPER AH18221W
5. 20A-347V 3-WAY WHITE - COOPER AH18223W
2. RECEPTACLES (STYLE LINE DECORATOR SERIES):
1. 15A-125V DUPLEX WHITE - DR15WHI
2. 20A-125V DUPLEX WHITE - DR20WHI
3. 15A-125V GFCI DUPLEX - GF15WLA
4. 20A-125V GFCI DUPLEX - GF20WLA
3. TAMPER RESISTANT RECEPTACLES (STYLE LINE DECORATOR SERIES):
1. 15A-125V DUPLEX WHITE - DR15WHITR
2. 20A-125V DUPLEX WHITE - DR20WHITR
3. 15A-125V GFCI DUPLEX - GFTR15W
4. 20A-125V GFCI DUPLEX - GFTR20W
4. USB RECEPTACLE (STYLE LINE DECORATOR SERIES)
1. 15A-125V USB DUPLEX WHITE, 5A USB A/C - USB15AC5W
5. WALL PLATES (STYLE LINE): STANDARD SIZE WHITE NYLON;
1. 1-GANG - NP26W
2. 2-GANG - NP262W
3. 3-GANG - NP263W
4. 4-GANG - NP264W, ETC.
6. WALL PLATES (STYLE LINE): STANDARD SIZE STAINLESS;
1. 1-GANG - SS26
2. 2-GANG - SS262
3. 3-GANG - SS263
4. 4-GANG - SS264, ETC.]
6. ACCEPTABLE MANUFACTURER PASS & SEYMOUR AND COOPER
11. ROOF TOP EQUIPMENT
1. COORDINATE SIZE OF BREAKERS AND FEEDERS WITH MECHANICAL. FEEDERS ON DRAWINGS ARE BASED ON DESIGN LOADS PROVIDED IN MECHANICAL DRAWINGS. CONTRACTOR SHALL CONFIRM THE FEEDER SIZES AND BREAKERS ON SHOP DRAWINGS PRIOR TO ROUGH-IN AND PURCHASE OF MATERIAL/EQUIPMENT TO POWER UP UNITS. DISCREPANCIES ARE TO BE NOTED TO THE ENGINEER.
2. PROVIDE MAINTENANCE RECEPTACLES AS REQUIRED BY ESA. COORDINATE WITH MECHANICAL; SHOULD THE EQUIPMENT NOT INCLUDE A MAINTENANCE RECEPTACLE AS AN OPTION, THE CONTRACTOR SHALL INCLUDE TO PROVIDE A 15/20R GFI RECEPTACLE AND A 1P-20A BREAKER FROM THE LOCAL PANEL FOR EACH GROUP OF UNITS. UNITS MORE THAN 50'-0" APART SHALL HAVE ITS OWN RECEPTACLE. RECEPTACLE SHALL BE MOUNTED TO A PEDESTAL OR ROOF CURB AND SEALED WATERTIGHT. PROVIDE AN IN-USE COVER FOR THE RECEPTACLE.

3. LIGHTING
1. MANUFACTURER'S OPERATIONAL TESTS:
1. TEST FIXTURE FOR ACCEPTANCE OF LAMP MADE TO MAXIMUM TOLERANCE AS REQUIRED.
2. TEST FIXTURES AS A COMPLETE SYSTEM FOR STARTING AND OPERATION.
3. CHECK WIRING FOR AGREEMENT WITH DESIGN CIRCUIT.
4. TEST FOR SHORT CIRCUITS AND IMPROPER GROUNDS.
2. HANGERS AND FITTINGS
1. SUPPORT FIXTURES AS SHOWN ON THE DRAWINGS, LEVEL, PLUMB AND TRUE WITH THE STRUCTURE AND OTHER EQUIPMENT, AND IN A HORIZONTAL OR VERTICAL POSITION AS INTENDED.
2. WALL OR SIDE BRACKET MOUNTED FIXTURE HOUSINGS SHALL BE RIGIDLY INSTALLED AND ADJUSTED TO GIVE A NEAT FLUSH FIT TO THE SURFACE ON WHICH IT IS MOUNTED.
3. SUPPORTS:
1. SUPPORT FIXTURES BY HANGERS AND MOUNTING ARRANGEMENTS WHICH WILL NOT CAUSE THE FIXTURE FRAME, HOUSING, SIDES OR LENS FRAME TO BE DISTORTED; OR PREVENT COMPLETE ALIGNMENT OF SEVERAL FIXTURES IN A ROW.
2. MOUNTING METHODS FOR FIXTURES ON OR IN SUSPENDED CEILINGS ARE TO BE AS FOLLOWS:
3. WHERE LIGHTING FIXTURES ARE RECESSED INTO SUSPENDED CEILINGS, THESE FIXTURES ARE TO BE SUPPORTED INDEPENDENTLY OF THE CEILING USING #12 JACK CHAIN HANGERS. EACH CHAIN IS TO BE SECURED SEPARATELY TO THE STRUCTURE ABOVE SO THAT NO WEIGHT FALLS ON THE CEILING SUSPENSION SYSTEM.
4. IN NO CASE WILL REINFORCEMENT OF THE CEILING SUSPENSION SYSTEM BE CONSIDERED TO BE ADEQUATE SUPPORT FOR THE LIGHTING FIXTURES.
5. WHERE CROSS MEMBER SUPPORTS ARE REQUIRED ABOVE THE CEILING TO PROVIDE SUPPORT POINTS, THESE ARE TO BE STEEL CHANNELS OR ANGLES.
4. INSTALLATION:
1. INSTALLATION OF ALL LIGHTING EQUIPMENT SHALL COMPLY WITH THE RELEVANT SECTIONS OF THE ONTARIO ELECTRICAL SAFETY CODE.
2. CLUSTER OF RECESSED FIXTURES SHALL BE WIRED WITH BX90 OR R90 WIRE IN FLEXIBLE STEEL CONDUIT TO ADJACENT OUTLET BOXES PLACED ABOVE THE FINISHED CEILING, WITHIN REACH OF THE FIXTURE HOLES. MAIN HOME RUNS TO BE EMT FROM JUNCTION BOX AT CLUSTER OF FIXTURES TO PANEL.
3. AT THE COMPLETION OF CONSTRUCTION AND ACCEPTANCE OF WORK, ALL LIGHTING FIXTURES SHALL BE CLEAN, COMPLETE WITH ALL NECESSARY ACCESSORIES AND PROVIDED WITH THE REQUIRED OPERATING LAMP(S).
4. FIXTURES AS SHOWN ON THE ELECTRICAL DRAWINGS ARE APPROXIMATE LOCATIONS ONLY. INSTALLATION OF FIXTURES SHALL BE IN ACCORDANCE WITH REFLECTED CEILING PLANS, DETAILS AND/OR FIELD INSTRUCTIONS ISSUED BY THE ARCHITECT.
5. ALL 347V FIXTURES TO HAVE LOCAL DISCONNECT TO COMPLY WITH THE ONTARIO ELECTRICAL SAFETY CODE.
6. UPON COMPLETION CLEAN LIGHTING REFLECTORS, LENSES AND OTHER LIGHTING SURFACES THAT HAVE BEEN EXPOSED TO CONSTRUCTION DUST AND DIRT.
7. THE MOUNTING HEIGHTS OF BUILDING MOUNTED FIXTURES SHALL BE CONFIRMED PRIOR TO ROUGH-IN. REVIEW ARCHITECTURAL PLANS/ELEVATIONS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN PLANS AND INDICATED MOUNTING HEIGHTS IN SCHEDULES/PLANS BETWEEN METRIC AND IMPERIAL DESIGNATED HEIGHTS.
5. MATERIAL AND EQUIPMENT QUALITY CONTROL
1. PROVIDE 5% SPARE LAMPS OR EACH TYPE OF LAMP (MINIMUM ONE OF EACH TYPE).
2. REPLACE INCANDESCENT AND HALOGEN LAMPS BURNING OUT WITHIN 3 MONTHS OF TAKEOVER. REPLACE FLUORESCENT AND HID LAMPS BURNING WITHIN 12 MONTHS OF TAKEOVER. BALLASTS THAT FAIL OR EXCEED THEIR ORIGINAL NOISE LEVEL RATING SHALL BE REPLACED WITHIN 12 MONTHS OF TAKEOVER.
3. LED FIXTURES (DRIVERS, MODULES, ETC.) THAT FAIL WITHING 12 MONTHS OF TAKEOVER TO BE REPLACED WITH NEW OF SAME TYPE.

4. GROUND FAULT CIRCUIT INTERRUPTERS - CLASS "A"
1. GENERAL
1. COMPONENTS COMPRISING GROUND FAULT PROTECTIVE SYSTEM TO BE OF SAME MANUFACTURER.
2. BREAKER TYPE GROUND FAULT INTERRUPTER
1. SINGLE POLE GROUND FAULT CIRCUIT INTERRUPTER FOR 15A, 120V, 1 PHASE CIRCUIT C/W TEST AND RESET FACILITIES.
2. SINGLE POLE GROUND FAULT CIRCUIT INTERRUPTER FOR 30A, 120V, 1 PHASE CIRCUIT C/W TEST AND RESET FACILITIES.
3. INSTALLATION
1. DO NOT GROUND NEUTRAL ON LOAD SIDE OF GROUND FAULT RELAY.
2. PASS PHASE CONDUCTORS INCLUDING NEUTRAL THROUGH ZERO SEQUENCE TRANSFORMERS.
3. CONNECT SUPPLY AND LOAD WIRING TO EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
4. FIELD QUALITY CONTROL
1. PERFORM TESTS IN ACCORDANCE WITH SECTION 16010 - ELECTRICAL GENERAL REQUIREMENTS.
2. ARRANGE AND PAY FOR FIELD TESTING OF GROUND FAULT EQUIPMENT BY INDEPENDENT TESTING LABORATORY GROUND FAULT EQUIPMENT MANUFACTURER CONTRACTOR BEFORE COMMISSIONING SERVICE.
3. SUBMIT REPORT OF TESTS TO CONSULTANT AND A CERTIFICATE THAT SYSTEM AS INSTALLED MEETS CRITERIA SPECIFIED HEREIN.
4. DEMONSTRATE SIMULATED GROUND FAULT TESTS.

5. COMPUTER/TELECOM CABLING SYSTEM
1. SCOPE OF WORK
1. RETAIN SERVICES OF BROCK UNIVERSITY APPROVED VENDOR AND CARRY ASSOCIATED COSTS ACCORDINGLY;
1. APPROVED VENDORS:
A. TELCON DATVOX
5.1.1.1.A.1. CONTACT: HYPERLINK "mailto:TELECON@BELLNET.CA" TELECON@BELLNET.CA, TEL: 905-262-5611, 1-800-668-9839, FAX: 905-262-5615
B. SYSTEMMACS
5.1.1.1.B.1. CONTACT: JOHN MERZA, HYPERLINK "mailto:JMERZA@SYSTEMMACS.COM" JMERZA@SYSTEMMACS.COM, TEL: 905-933-5804
2. ALL INSTALLATIONS ARE TO MEET OR EXCEED BROCK UNIVERSITY STANDARDS AND SPECIFICATIONS.
3. THIS CONTRACTOR SHALL PROVIDE AND INSTALL ALL CONDUITS AND PATHWAYS FOR INSTALLATION OF STRUCTURED WIRING BY APPROVED VENDOR.
A. MINIMUM SIZE OF CONDUIT SHALL BE 1" (25mm)
2. SUPPLY AND INSTALL A STRUCTURED WIRING SYSTEM USING CATEGORY 6 TWISTED PAIR TECHNOLOGY IN ACCORDANCE WITH EIA/TIA 568B WIRING SPECIFICATION.
3. EACH COMPUTER OUTLET SHOWN NEW ON THE DRAWINGS SHALL MEET OR EXCEED CATEGORY 6 EIA/TIA SPECIFICATION.
1. CATEGORY 6, 4 PAIR TWISTED CABLE FT6 (PLENUM RATED) HOME RUN CABLE FROM EACH INDIVIDUAL OUTLET TO HUB CLOSET VIA CONDUIT AND/OR WIREWAY SYSTEM. NO RUNS FROM THE COMPUTER OUTLET TO THE WIRING CLOSET SHALL EXCEED THE RECOMMENDED EIA/TIA 568B SPECIFICATION.
2. CABLING SHALL TERMINATE AT THE COMPUTER OUTLET WITH AN RJ45 WHICH MEETS/EXCEEDS CATEGORY 6 (EIA/TIA 568B) SPECIFICATIONS.
3. ALL TERMINATIONS, AT THE PATCH PANELS OR OUTLETS SHALL MEET EIA/TIA 568B WIRING CONFIGURATIONS.
4. PROVIDE SLEEVES AND FIRESTOP ALL CABLING PENETRATIONS THROUGH FIRE RATED ASSEMBLIES.
5. CABLING SHALL BE IN CONDUIT IN EXPOSED AREAS. J HOOKS MAY BE USED IN CONCEALED SPACES WHERE NOTED AS ACCEPTABLE. OUTLETS IN NEW WALLS SHALL BE PROVIDED IN CONDUIT COMPLETE WITH BUSHINGS TO ACCESSIBLE CEILING SPACES.
4. HOME RUN ALL CABLES AND TERMINATE IN THE IT AND TELECOM CLOSET.
5. PROVIDE PATCH PANELS AND TERMINATE ALL OUTLET CABLES. EACH SYSTEM SHALL HAVE ITS OWN PATCH PANEL. DATA AND VOICE OUTLETS SHALL NOT BE TERMINATED ON THE SAME PANEL UNLESS DIRECTED BY THE OWNER. PANELS SHALL HAVE A MINIMUM OF 25% SPARE CAPACITY. PROVIDE AN ADDITIONAL PANEL IF CAPACITY IS LESS THAN 25%.
6. PROVIDE HORIZONTAL CABLE MANAGERS UNDER AND ABOVE EACH PATCH PANEL.
7. PROVIDE VERTICAL CABLE MANAGERS ON EACH SIDE OF THE RACK. RACKS MOUNTED IN ROWS SHALL NOT SHARE A COMMON MANAGER UNLESS IT IS DOUBLE CAPACITY.
8. ALL REQUIRED COMPUTER EQUIPMENT AND ASSOCIATED WIRING CONNECTIONS WILL BE SUPPLIED AND INSTALLED BY OWNER.
9. AT THE END OF THE PROJECT, SUPPLY AND TURN OVER TO THE OWNER, ONE 7'-0" CATEGORY 6 PATCH CORD FOR EVERY RJ45 COMPUTER JACK SPECIFIED ON THIS PROJECT. PROVIDE PATCH CABLES OF SUFFICIENT LENGTH TO ALLOW THE OWNER TO PATCH ALL OUTLETS INTO THEIR EQUIPMENT AT THE RACK. CABLING IS TO BE SMALL DIAMETER FOR ALL APPLICATIONS UPTO 30W POE. APPLICATIONS OVER THIS ARE TO USE REGULAR DIAMETER CABLING FOR PATCH CORDS.
10. COMPUTER CABLING SYSTEM (HARDWARE, CABLES, CONNECTORS AND INSTALLATION) SHALL ALL BE IN ACCORDANCE WITH EIA/TIA 568B SPECIFICATIONS.
11. PROVIDE FULL HEIGHT 2 POST DATA RACKS AND SECURELY ANCHOR TO FLOOR. RACKS ARE TO BE CAPABLE OF ATTACHING VERTICAL CABLE MANAGERS.
12. PROVIDE FULL HEIGHT POWER STRIPS WITH 15/20A OUTLETS (MIN 10) ON THE BACKSIDE OF THE RACK. STRIP IS TO INCLUDE 15'-0" CORD.
2. COORDINATION
1. VERIFY AND COORDINATE THE DETAILS OF THE ENTIRE SYSTEM WITH THE END USER PRIOR TO SUBMITTING SHOP DRAWINGS.
3. CONSTRUCTION DRAWINGS
1. THE SYSTEM INTEGRATOR SHALL PROVIDE, UPON COMPLETION OF SHOP DRAWINGS, IN AUTOCAD 2010 FORMAT (ON CD), CONSTRUCTION DRAWINGS. THESE DRAWINGS SHALL HAVE ALL DETAILS IN REGARDS TO THE CABLING SYSTEM, SUCH AS CLOSET LOCATION AND DESIGNATION, CABLE ROUTING AND JACK LOCATION.
4. PRODUCTS
1. CATEGORY 6 CABLE IN ACCORDANCE WITH EIA/TIA 568B CRITERIA. PROVIDE BLUE CABLE FOR DATA WIRING AND PROVIDE WHITE CABLE FOR VOICE WIRING.
2. COMPUTER FACE PLATES, CAPABLE OF ACCEPTING 4 MODULES FOR DATA. PROVIDE BLANKS FOR UNUSED JACK LOCATIONS IN FACEPLATE.
3. DATA TERMINATIONS MUST BE WIRED TO EIA/TIA 568B WIRING SCHEMATIC IN RJ45 JACKS.
4. OUTLETS ARE TO BE CATEGORY 6 , MODULAR TYPE. PROVIDE INTERNATIONAL WHITE FOR VOICE AND BLUE FOR DATA UNLESS SPECIFIED OTHERWISE.
5. PLATES SHALL BE PLASTIC, INTERNATIONAL WHITE IN COLOUR.
6. NECESSARY 3/4" (19mm) FIRE RATED PLYWOOD BACKBOARDS AS SHOWN ON DRAWINGS.
7. INDIVIDUAL OUTLET CONDUITS AND TERMINAL FEEDER CONDUITS TO BE EMT IN ACCORDANCE WITH SECTION 2.6.
5. OUTLET BOXES
1. TELEPHONE OUTLET: LOW VOLTAGE RING, FLUSH FACEPLATE WITH RJ45 VOIP JACK
2. COMPUTER OUTLET: LOW VOLTAGE RING, FLUSH FACEPLATE WITH RJ45 JACK.
3. COMBINATION TELEPHONE/COMPUTER OUTLET: LOW VOLTAGE RING, FLUSH FACEPLATE WITH RJ45 VOIP JACK AND RJ45 JACK FOR COMPUTER, BOTH ON A COMMON SINGLE GANG PLATE.
4. WIRELESS ACCESS POINT: SURFACE MOUNT BACKBOX, FACEPLATE AND RJ45 JACK.
6. PRODUCT MANUFACTURERS:
1. CATEGORY 6 TWISTED PAIR CABLE:
1. BELDEN
2. PANDUIT
2. COMPUTER INFRASTRUCTURE COMPONENTS
1. PANDUIT
2. BELDEN
3. RACKS
1. ELECTRON METAL
2. PANDUIT
4. POWER STRIPS
1. ELECTRON METAL
2. PANDUIT
5. OTHER MANUFACTURES SUBJECT TO APPROVAL PRIOR TO BID.
7. SYSTEM INSTALLERS
1. ACCEPTABLE INSTALLERS OF THE SYSTEM SPECIFIED HEREIN AND AS DESCRIBED ON THE DRAWINGS SHALL BE CERTIFIED BY THE VENDOR OF THE COMPONENTS BEING INSTALLED.
1. TELCON DATVOX
A. CONTACT: TELECON@BELLNET.CA, TEL: 905-262-5611, 1-800-668-9839, FAX: 905-262-5615
2. SYSTEMMACS
A. CONTACT: JOHN MERZA, JMERZA@SYSTEMMACS.COM, TEL: 905-933-5804
2.
8. COMPUTER TERMINATION EQUIPMENT
1. SUPPLY AND INSTALL IN-BUILDING DISTRIBUTION EQUIPMENT AS FOLLOWS:
1. NECESSARY PANDUIT MINI-COM MOUNTING FRAMES (24 PORTS CPPL24WBLY) FOR TERMINATING ALL COMPUTER CABLES AND TELEPHONE CABLES PLUS 25% SPARE CAPACITY. PROVIDE ADDITIONAL SPARE FRAMES TO ACCOMMODATE THE 25% SPARE CAPACITY.
2. NECESSARY MINI COM OUTLETS FOR TERMINATING ALL COMPUTER CABLES (RJ45) AND TELEPHONE (RJ45).
3. TEST/CERTIFY CABLING AND CHECK SERVICE.
4. PROVIDE RJ45 CABLE THAT IS RUN OVER AND PUNCHED DOWN TO BIX BLOCK
9. EXECUTION - INSTALLATION
1. INSTALL OUTLET BOXES SO THAT COVERPLATES ARE VERTICAL AND EVEN WITH ADJACENT OUTLETS.
2. CONDUITS TO INDIVIDUAL OUTLETS TO CABLE TRAYS TO BE 25mm (1" EMT) STUBBED INTO ACCESSIBLE CEILING SPACE COMPLETE WITH BUSHINGS
3. TELEPHONE/COMPUTER SYSTEM SHALL SHARE ONE OUTLET BOX AND ONE CONDUIT.
4. PROVIDE JUNCTION AND PULL BOXES AS REQUIRED.
5. INSTALL TWO PULL ROPES IN CONDUIT SYSTEM FOR EACH OUTLET.
6. TERMINATE INDIVIDUAL OUTLET CONDUITS INTO CEILING SPACES.
7. INSTALL ALL JUNCTION AND PULL BOXES SO AS NOT TO INTERFERE WITH, NOR BE INTERFERED WITH, BY PIPING, DUCTWORK OR OTHER BUILDING SYSTEMS.
8. MOUNT EQUIPMENT FRAMES IN COMMUNICATION ROOM. TERMINATE ALL COMPUTER WIRING FOR COMPLETE INSTALLATION.
9. HOME RUN EACH CABLE FROM TELEPHONE/COMPUTER OUTLETS IN CONDUIT TO CORRIDOR, THEN IN CABLE TRAY TO COMMUNICATION ROOM.
10. LONG DISTANCE DATA AND VOIP OUTLETS (APPROXIMATELY 70m (225'-0") AND LONGER) ON PLANS SHALL HAVE THE DISTANCE MEASURED PRIOR TO BEGINNING ROUGH-IN ALONG THE INTENDED INSTALLATION PATH. SHOULD THE OUTLET EXCEED 90m OR 305'-0"; THE CONTRACTOR SHALL NOTIFY THE ENGINEER FOR INSTRUCTION ON HOW TO PROCEED.
10. WIRING
1. FROM EACH TELEPHONE JACK SHOWN, PROVIDE HOME RUN CABLE, 4 PAIR CATEGORY 6, FT6 (PLENUM) RATED CABLE FROM JACK TO MAIN EXISTING TELEPHONE BOARD VIA CONDUIT, J HOOKS OR CABLE TRAYS.
2. FROM EACH COMPUTER JACK SHOWN, PROVIDE A HOME RUN CABLE, 4 PAIR, CATEGORY 6, FT6 (PLENUM) RATED CABLE IN ACCORDANCE WITH EIA/TIA 568B CRITERIA RUN TO EXISTING HUB VIA CONDUIT, J HOOKS OR CABLE TRAYS.
3. FROM EACH WIRELESS ACCESS POINT SHOWN, PROVIDE A HOME RUN CABLE, 4 PAIR CATEGORY 6, FT6 (PLENUM) RATED CABLE IN ACCORDANCE WITH EIA/TIA 568B CRITERIA RUN TO EXISTING HUB VIA CONDUIT, J HOOKS OR CABLE TRAYS.
4. CONTRACTOR SHALL PROVIDE ALL WIRING SUPPORTS.
11. IDENTIFICATION
1. ALL PULL AND JUNCTION BOXES SHALL BE LABELED TO INDICATED SYSTEMS AND TERMINATION LOCATIONS OF RACEWAYS IN AND OUT.
2. PULL ROPES SHALL BE TAGGED WITH OUTLET LOCATIONS.
12. INSTALLATION, TESTING AND CERTIFICATION
1. TOTAL COMPONENTS AND WIRING SYSTEM MUST MEET CATEGORY 6 AND EIA/TIA 568B SPECIFICATIONS.
2. 100% TOTAL TESTING TO TIA/EIA 568B, CATEGORY 6 SPECIFICATIONS AT 250MHz.
3. TELEPHONE OUTLETS ARE TO BE QUALIFIED. CABLING IS TO BE TESTED ACROSS ALL PAIRS. INSTALL RJ11 JACK FOR NON-VOIP INSTALLATIONS AFTER CABLING IS QUALIFIED.
4. A FULL TESTING REPORT SHALL BE PROVIDED AS PART OF THE CLOSE OUT DOCUMENTS. A PASS/FAIL SUMMARY SHEET SHALL BE PROVIDED IN ADDITION TO THE TEST SHEET FOR EVERY OUTLET IN THE PROJECT. A FLOOR PLAN SHALL BE PROVIDED WITH ALL THE JACKS IDENTIFIED AND LABELED PER THE OWNERS SCHEME. THE TEST REPORT SHALL REFERENCE THE SAME NUMBERING SCHEME.
13. WARRANTY
1. MINIMUM 1 YEAR WARRANTY.
2. MINIMUM 15 YEAR FACTORY WARRANTY ON ALL PASSIVE COMPONENTS (PHYSICAL CABLING PLANT)
3. MINIMUM 10 YEAR CERTIFICATION FOR 100Mbps/1Gbps/10Gbps DATA TRANSMISSION.
4. IF AN APPLICATION FAILS TO PERFORM DUE TO PROBLEMS WITH THE CABLING SYSTEM WITHIN A 10 YEAR PERIOD AFTER SYSTEM IS ACCEPTED BY CUSTOMER, THE SYSTEM INTEGRATOR SHALL PROVIDE TECHNICAL ASSISTANCE (AT NO COST TO THE END USER) TO HELP RESOLVE THESE PROBLEMS.
5. CABLE PLAN MUST ADHERE TO EIA/TIA COMMERCIAL BUILDING WIRING SPECIFICATION AND CSA T529-M91.
6. CABLE PLAN MUST MEET THE ONTARIO BUILDING FIRE REGULATIONS AS RELATED TO PLENUM CABLE.
7. IDENTIFY, TAG AND LABEL ALL WIRING TO CORRESPONDING OUTLETS TO ALLOW OWNER TO MAKE FINAL CONNECTIONS TO HIS EQUIPMENT.
14. SYSTEM INTEGRATOR
1. ENGAGE THE SERVICES OF AN EXPERIENCED CABLE INSTALLATION COMPANY FOR THE COMPLETE SUPPLY, INSTALLATION, TERMINATIONS, TESTING AND CERTIFICATION OF THE COMPLETE COMPUTER CABLING SYSTEM. ALL COSTS ARE TO BE INCLUDED IN THE ELECTRICAL TENDER PRICE.

6. TELECOMMUNICATIONS RACEWAY SYSTEM
1. SYSTEM DESCRIPTION
1. TELECOMMUNICATIONS RACEWAYS SYSTEM CONSISTS OF OUTLET BOXES, COVER PLATES, TERMINAL DISTRIBUTION CABINETS, CONDUITS, PULL BOXES, SLEEVES AND CAPS, FISH WIRES, SERVICE POLES, SERVICE FITTINGS, CONCRETE ENCASED DUCTS.
2. MATERIAL
1. CONDUITS: REFER TO CONDUITS, CONDUIT FASTENINGS AND CONDUIT FITTINGS.
2. JUNCTION BOXES, CABINETS TYPE E: SPLITTERS, JUNCTION, PULL BOXES AND CABINETS.
3. OUTLET BOXES, CONDUIT BOXES AND FITTINGS: SPLITTERS, JUNCTION, PULL BOXES AND CABINETS.
4. FISH WIRE: POLYPROPYLENE TYPE.
5. BLANK STAINLESS-STEEL PLATES FOR ALL UNUSED OUTLETS, WHICH DID NOT RECEIVE A DATA AND TELEPHONE JACKS SUPPLIED AND INSTALLED BY OWNER, AT SUBSTANTIAL COMPLETION OF THE PROJECT.
3. INSTALLATION
1. INSTALL RACEWAY SYSTEM, INCLUDING OVERHEAD DISTRIBUTION SYSTEM, FISH WIRE, TERMINAL CABINETS, OUTLET BOXES, FLOOR BOXES, PULL BOXES, COVER PLATES, CONDUIT, SLEEVES AND CAPS, SERVICE POLES, MISCELLANEOUS AND POSITIONING MATERIAL TO CONSTITUTE COMPLETE SYSTEM.
2. ALL SPECIFIED TELEPHONE AND DATA TERMINATION BOXES ARE TO BE FLUSH MOUNTED IN THE WALL 300mm ABOVE THE FLOOR UNLESS OTHERWISE SPECIFIED. THE WALL TERMINATION BOXES ARE TO BE 100mm X 54mm TO ACCOMMODATE 25mm CONDUIT. ALL CONDUIT FROM WALL TERMINATION BOXES IS TO BE 25mm UNLESS OTHERWISE SPECIFIED.
3. ALL CONDUIT RUNS ARE TO BE CONTINUOUS FROM THE SPECIFIED OUTLET LOCATION TO THE ELECTRICAL ROOM OR TELEPHONE BACKBOARD. ALL JUNCTION AND PULL BOXES ARE TO BE ACCESSIBLE.
4. ALL EMPTY CONDUIT IS TO HAVE BOTH ENDS OF THE CONDUIT RUN LABELLED AS ITS PURPOSE AND DESTINATION. ALL EMPTY CONDUIT RUNS ARE TO HAVE A PULL CORD INSTALLED THROUGH THEIR ENTIRE RUN WITH BOTH ENDS BEING TIED OFF.
5. CONDUITS FROM EACH TELEPHONE AND DATA OUTLET TO BE 20mm (3/4") EMT INTO ACCESSIBLE CEILING SPACE OR AS SHOWN ON DRAWINGS.
6. INSTALL BLANK PLATES FOR ALL UNUSED OUTLETS.

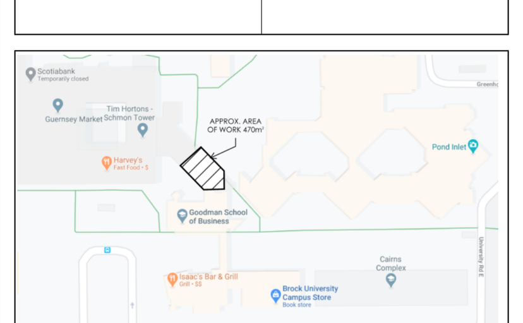
7. EXISTING FIRE ALARM SYSTEM
1. GENERAL
1. THE EXISTING FIRE ALARM SYSTEM IS OF EDWARDS MANUFACTURE TYPE EST3.
2. ALL FIRE DETECTION AND SIGNALING DEVICES SHALL BE CONNECTED TO ZONES AS INDICATED ON PLANS.
3. SUPPLY AND INSTALL ADDITIONAL THERMAL DETECTORS, MANUAL PULL STATIONS, FIRE BELLS AND SMOKE DETECTORS, ALL AS SHOWN ON DRAWINGS.
4. WIRE NEW AND RELOCATED DEVICES INTO FIRE ALARM ZONE IN THIS AREA.
5. ALL NEW WIRING FOR ALARM SYSTEM SHALL BE MINIMUM #14 RW90 RUN IN CONCEALED CONDUIT.
6. ELECTRICAL CONTRACTOR IS TO ENGAGE AN APPROVED TESTING COMPANY TO VERIFY THAT ALL NEW AND EXISTING FIRE ALARM DEVICES WITHIN SCOPE OF WORK AREA HAVE BEEN WIRED AND ARE OPERATING PROPERLY. PROVIDE A CERTIFICATE OF VERIFICATION AND TEST REPORT. ELECTRICAL CONTRACTOR TO PROVIDE ASSISTANCE TO TESTING COMPANY AS REQUIRED BY THEM. INCLUDE ALL COSTS IN TENDER PRICE.
7. SYSTEM TO BE INSTALLED IN ACCORDANCE WITH CAN/ULC S-524 (CURRENT EDITION) AND OFC-410(M).
8. TESTS AND VERIFICATION TO BE PERFORMED IN ACCORDANCE WITH CAN/ULC-S537 (CURRENT EDITION).
9. WHERE FIRE PROTECTION AND LIFE SAFETY SYSTEMS, AND SYSTEMS WITH FIRE PROTECTION AND LIFE SAFETY FUNCTIONS ARE INTEGRATED WITH EACH OTHER; THE SYSTEM SHALL BE TESTED AS A WHOLE IN ACCORDANCE WITH CAN/ULC-S1001, "INTEGRATED SYSTEMS TESTING OF FIRE PROTECTION AND LIFE SAFETY SYSTEMS", TO VERIFY THAT THE SYSTEM HAS BEEN PROPERLY INTEGRATED.
10. UPDATE GRAPHICS BESIDE MAIN CONTROL PANEL AND ANNUNCIATOR PANEL.
11. INCLUDE FOR ALL COSTS INVOLVED FROM BOTH MANUFACTURERS AND THE ELECTRICAL CONTRACTOR'S WORK IN TOTAL TENDER PRICE FROM THE ELECTRICAL CONTRACTOR.
12. THE CONTRACTOR SHALL ENSURE THE VERIFICATION OF THE FIRE ALARM INCLUDES ANY SECURITY DOORS. THE CONTRACTOR AND FIRE ALARM COMPANY SHALL TEST THE DOORS TO ENSURE THEY CLOSE AND/OR UNLOCK ON LOCAL CONTROL AND ON FACILITY WIDE. THE DOORS ARE TO BE TESTED AS A COMPLETE SYSTEM WITH THE SECURITY AND FIRE ALARM DEVICES.
13. VERIFY FIRE ALARM SYSTEM OF THE AREA WITHING SCOPE OF WORK AND ANY ADJACENT SPACES THAT HAVE BEEN IMPACTED BY RENOVATION AND PROVIDE A CERTIFICATE OF VERIFICATION AND TEST REPORT.

8. EMERGENCY LIGHTING SYSTEM:
1. GENERAL
1. CONNECT SELECT LIGHT FIXTURES TO EXISTING EMERGENCY STANDBY GENERATOR.
1. INCLUDE FOR ALL COMPONENTS AND ACCESSORIES TO ENSURE LIGHTING IS CONTROLLED VIA LOCAL CONTROL SYSTEM AS PER ORDER OF OPERATION. IN EVENT OF EMERGENCY STATE (IE. POWER OUTAGE, ETC.) SYSTEM IS TO SET THE FIXTURE ON EMERGENCY CIRCUIT TO FULL OUTPUT REGARDLESS OF THE LIGHTING CONTROL STATE OR STATUS.
2. WARRANTY: ALL EQUIPMENT IS TO BE WARRANTED FOR A PERIOD OF TWO (2) YEARS FROM THE DATE OF FINAL ACCEPTANCE. FOR BATTERIES, THE WARRANTY IS EXTENDED TO 120 MONTHS, WITH A NO-CHARGE REPLACEMENT DURING THE FIRST 5 YEARS AND A PRO-RATE CHARGE ON THE SECOND 5 YEARS.
3. WIRING: WIRING TO THE EMERGENCY LIGHTS AND EXIT FIXTURES SHALL BE RW90 MINIMUM #10 GAUGE FOR EACH CIRCUIT AND RUN IN CONDUIT. WIRING SIZES IN ACCORDANCE WITH MANUFACTURERS COMMENDATIONS FOR DISTANCES REQUIRED.
4. REMOTE EMERGENCY LIGHTING FIXTURES: SUPPLY AND INSTALL EXIT LIGHTING FIXTURES, AND LAMPS AS SPECIFIED IN LIGHT FIXTURE SCHEDULE AND SHOWN ON DRAWINGS.
5. WIRE ALL SYSTEMS USING CONCEALED #10 AWG WIRING RUN IN EMT OR ARMOURED CABLE.
2. TESTING AND VERIFICATION:
1. WHEN THE INSTALLATION OF THE SYSTEM, AND ALL ASSOCIATED REMOTE EMERGENCY LIGHTS HAVE BEEN COMPLETED, RETAIN THE SERVICES OF A QUALIFIED REPRESENTATIVE OF THE EQUIPMENT MANUFACTURER TO TEST THE COMPLETION AND OPERATION OF THE SYSTEM.
2. FOLLOWING COMPLETION OF THE TEST, OBTAIN A LETTER FROM THE MANUFACTURER/SUPPLIER, STATING THAT THE NEW SYSTEM AND ASSOCIATED LIGHTS HAVE BEEN COMPLETELY CHECKED AND ARE OPERATING SATISFACTORILY.
3. A COPY OF THIS LETTER IS TO BE FORWARDED TO THE CONSULTING ENGINEER AND ONE COPY TO THE ARCHITECT.

9. EXIT LIGHTS:
1. PRODUCTS
1. AS SHOWN ON DRAWINGS.
2. ALL EQUIPMENT IS TO BE WARRANTED FOR A PERIOD OF TWO (2) YEAR FROM DATE OF FINAL ACCEPTANCE.
3. EXIT LIGHT TO BE SUITABLE FOR 120V AC AND 12V DC.
2. INSTALLATION
1. INSTALL EXIT LIGHTS.
2. CONNECT FIXTURES TO EXIT LIGHT CIRCUITS.
3. CONNECT EMERGENCY LAMP SOCKETS TO EMERGENCY CIRCUITS.
4. ENSURE THAT EXIT LIGHT CIRCUIT BREAKER IS LOCKED IN ON POSITION.

Brock University

PROJECT LOGO



KEY PLAN

No.	DESCRIPTION	DATE
5	ISSUED FOR TENDER	2022.01.19
4	ISSUED FOR 90% REVIEW	2021.12.07
3	ISSUED FOR PERMIT	2021.11.23
2	ISSUED FOR 50% REVIEW	2021.10.01
1	ISSUED FOR COSTING	2021.07.22

REVISIONS:

DO NOT SCALE THE DRAWINGS.

SEI Electrical Engineering
12 Argyle Street N.
Caledonia, ON N3W 1B6
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SEAL

CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
SPECIFICATIONS

DRAWN BY: AS | DATE: 2021.07.20
CHECKED BY: JR | SCALE: NTS

PROJECT NO.: 20-115

DRAWING NO.: E050

FILENAME: C:\Users\Lexi\Documents\20-115 Brock MCA E_21_aswansonSEI.rvt
PLOTDATE: 2022-01-17 14:54:11

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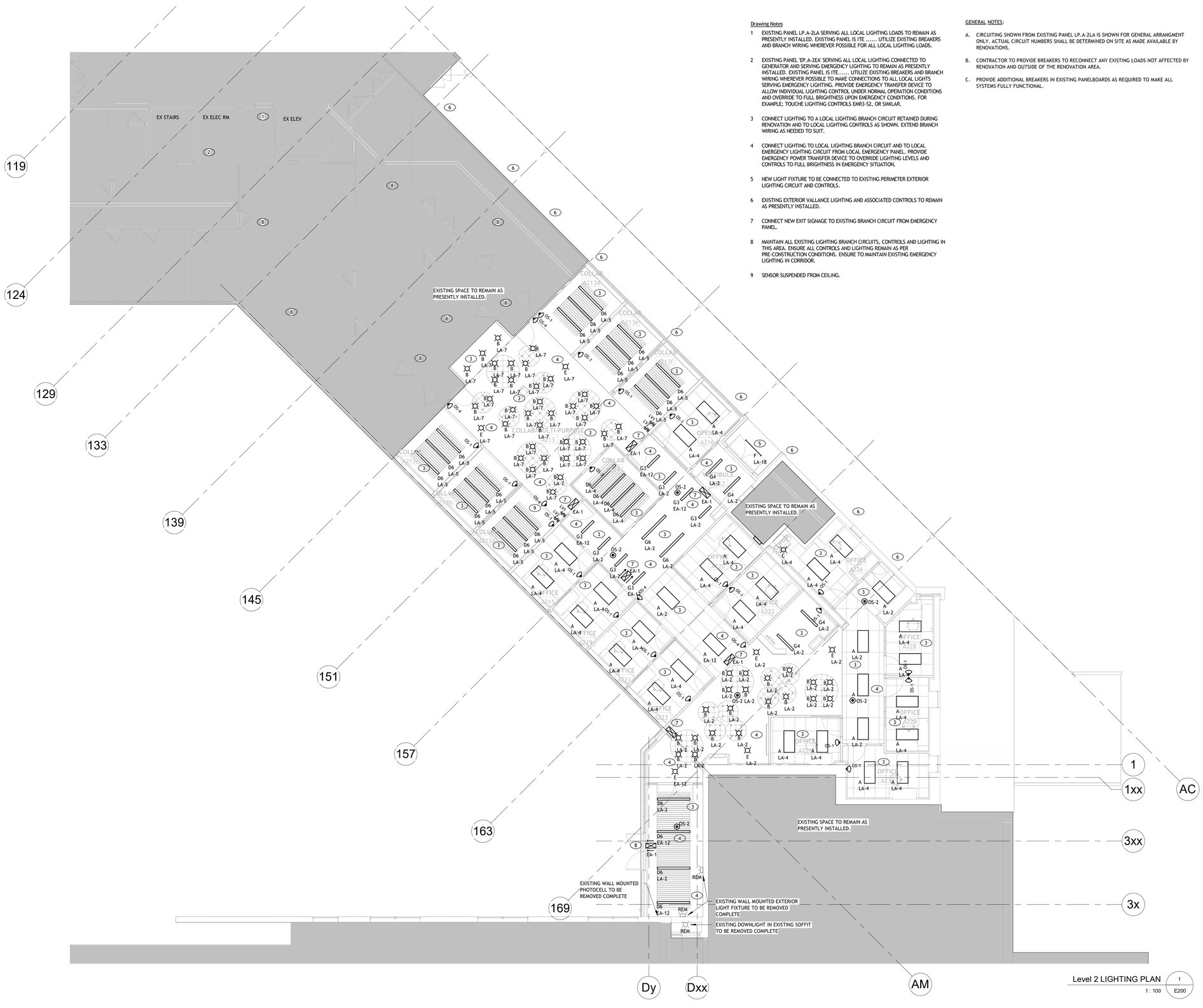

Level 2 LIGHTING PLAN 1 / 1 : 100

Drawing Notes

1 EXISTING PANEL LP.A-2LA SERVING ALL LOCAL LIGHTING LOADS TO REMAIN AS PRESENTLY INSTALLED. EXISTING PANEL IS ITE ..... UTILIZE EXISTING BREAKERS AND BRANCH WIRING WHEREVER POSSIBLE FOR ALL LOCAL LIGHTING LOADS.

2 EXISTING PANEL 'EP.A-2EA' SERVING ALL LOCAL LIGHTING CONNECTED TO GENERATOR AND SERVING EMERGENCY LIGHTING TO REMAIN AS PRESENTLY INSTALLED. EXISTING PANEL IS ITE..... UTILIZE EXISTING BREAKERS AND BRANCH WIRING WHEREVER POSSIBLE TO MAKE CONNECTIONS TO ALL LOCAL LIGHTS SERVING EMERGENCY LIGHTING. PROVIDE EMERGENCY TRANSFER DEVICE TO ALLOW INDIVIDUAL LIGHTING CONTROL UNDER NORMAL OPERATION CONDITIONS AND OVERRIDE TO FULL BRIGHTNESS UPON EMERGENCY CONDITIONS. FOR EXAMPLE; TOUCHE LIGHTING CONTROLS EMR3-S2, OR SIMILAR.

3 CONNECT LIGHTING TO A LOCAL LIGHTING BRANCH CIRCUIT RETAINED DURING RENOVATION AND TO LOCAL LIGHTING CONTROLS AS SHOWN. EXTEND BRANCH WIRING AS NEEDED TO SUIT.

4 CONNECT LIGHTING TO LOCAL LIGHTING BRANCH CIRCUIT AND TO LOCAL EMERGENCY LIGHTING CIRCUIT FROM LOCAL EMERGENCY PANEL. PROVIDE EMERGENCY POWER TRANSFER DEVICE TO OVERRIDE LIGHTING LEVELS AND CONTROLS TO FULL BRIGHTNESS IN EMERGENCY SITUATION.

5 NEW LIGHT FIXTURE TO BE CONNECTED TO EXISTING PERIMETER EXTERIOR LIGHTING CIRCUIT AND CONTROLS.

6 EXISTING EXTERIOR VALLANCE LIGHTING AND ASSOCIATED CONTROLS TO REMAIN AS PRESENTLY INSTALLED.

7 CONNECT NEW EXIT SIGNAGE TO EXISTING BRANCH CIRCUIT FROM EMERGENCY PANEL.

8 MAINTAIN ALL EXISTING LIGHTING BRANCH CIRCUITS, CONTROLS AND LIGHTING IN THIS AREA. ENSURE ALL CONTROLS AND LIGHTING REMAIN AS PER PRE-CONSTRUCTION CONDITIONS. ENSURE TO MAINTAIN EXISTING EMERGENCY LIGHTING IN CORRIDOR.

9 SENSOR SUSPENDED FROM CEILING.

GENERAL NOTES:

A. CIRCUITING SHOWN FROM EXISTING PANEL LP.A-2LA IS SHOWN FOR GENERAL ARRANGMENT ONLY. ACTUAL CIRCUIT NUMBERS SHALL BE DETERMINED ON SITE AS MADE AVAILABLE BY RENOVATIONS.

B. CONTRACTOR TO PROVIDE BREAKERS TO RECONNECT ANY EXISTING LOADS NOT AFFECTED BY RENOVATION AND OUTSIDE OF THE RENOVATION AREA.

C. PROVIDE ADDITIONAL BREAKERS IN EXISTING PANELBOARDS AS REQUIRED TO MAKE ALL SYSTEMS FULLY FUNCTIONAL.

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
5	ISSUED FOR TENDER	2022.01.19
4	ISSUED FOR 90% REVIEW	2021.12.07
3	ISSUED FOR PERMIT	2021.11.23
2	ISSUED FOR 50% REVIEW	2021.10.01
1	ISSUED FOR COSTING	2021.07.22

REVISIONS:

Electrical Engineering
12 Argyle Street N.
Caledonia, ON N3W 1B6
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SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

LEVEL 2 LIGHTING

DRAWN BY:	DATE:
AS	2021.07.20
CHECKED BY:	SCALE:
JR	1 : 100

PROJECT NO.: 20-115

DRAWING NO.: **E200**

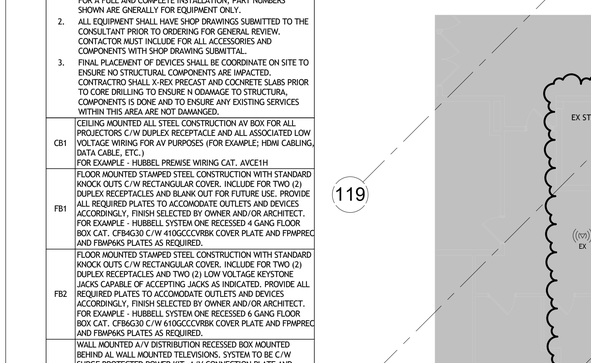
FILENAME: C:\Users\Lenz\Documents\20-115 Brock MCA_E_21_asiaenoteDE.rvt
PLOTTED: 2021-12-17 11:54:14

D 610x914

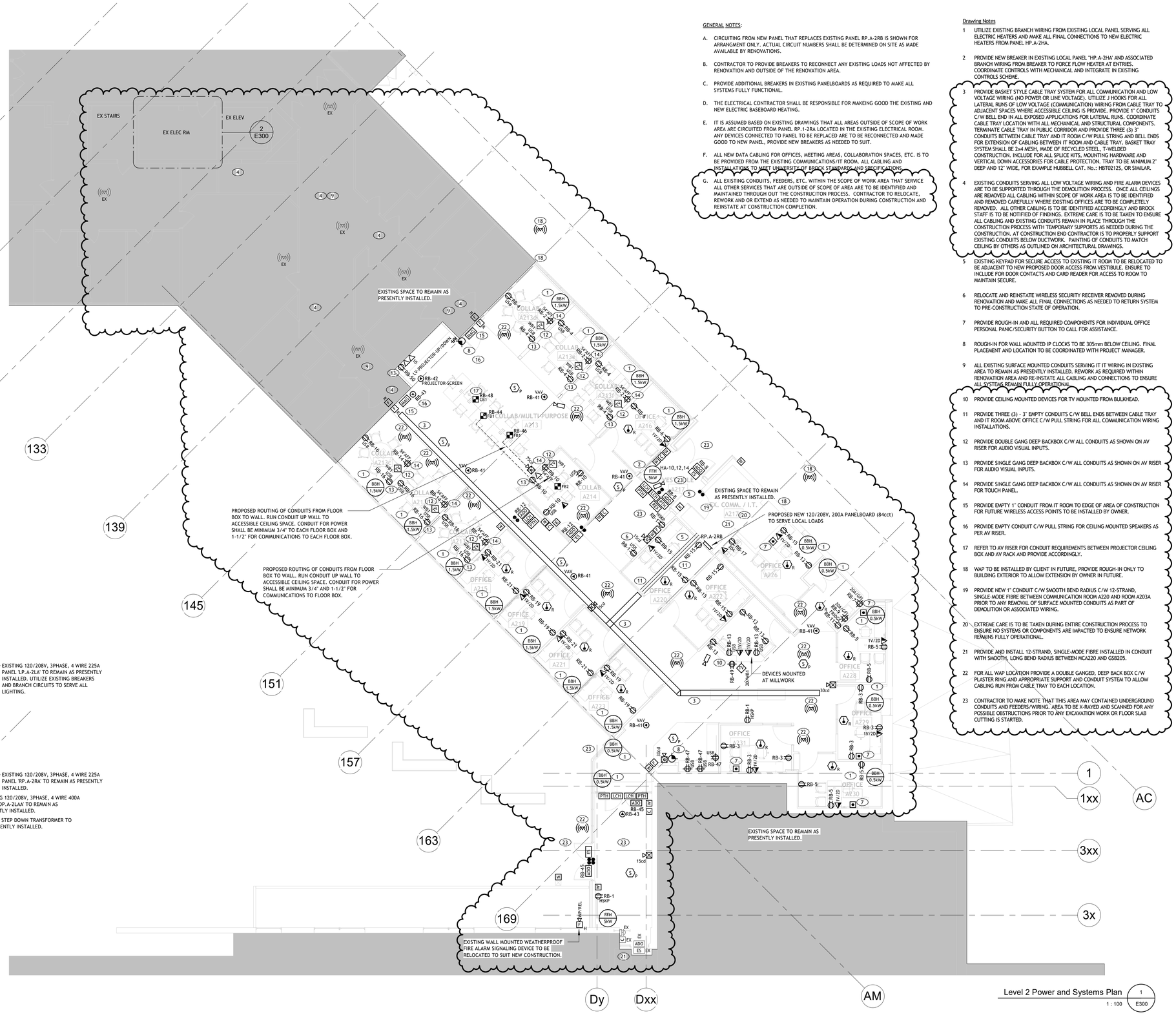
FLOOR WALL AND CEILING BOX SCHEDULE

1. CONTRACTOR IS TO INCLUDE FOR ALL ACCESSORIES AS REQUIRED FOR A FULL AND COMPLETE INSTALLATION, PART NUMBERS SHOWN ARE GNERALLY FOR EQUIPMENT ONLY.
2. ALL EQUIPMENT SHALL HAVE SHOP DRAWINGS SUBMITTED TO THE CONSULTANT PRIOR TO ORDERING FOR GENERAL REVIEW. CONTACTOR MUST INCLUDE FOR ALL ACCESSORIES AND COMPONENTS WITH SHOP DRAWING SUBMITTAL.
3. FINAL PLACEMENT OF DEVICES SHALL BE COORDINATE ON SITE TO ENSURE NO STRUCTURAL COMPONENTS ARE IMPACTED. CONTRACTRO SHALL X-REX PRECAST AND CONCRETE SLABS PRIOR TO CORE DRILLING TO ENSURE N ODAMAGE TO STRUCTURA, COMPONENTS IS DONE AND TO ENSURE ANY EXISTING SERVICES WITHIN THIS AREA ARE NOT DAMANGED.

CB1	CEILING MOUNTED ALL STEEL CONSTRUCTION AV BOX FOR ALL PROJECTORS C/W DUPLEX RECEPTACLE AND ALL ASSOCIATED LOW VOLTAGE WIRING FOR AV PURPOSES (FOR EXAMPLE; HDMI CABLING, DATA CABLE, ETC.,) FOR EXAMPLE - HUBBEL PREMISE WIRING CAT. AVCE1H
FB1	FLOOR MOUNTED STAMPED STEEL CONSTRUCTION WITH STANDARD KNOCK OUTS C/W RECTANGULAR COVER. INCLUDE FOR TWO (2) DUPLEX RECEPTACLES AND BLANK OUT FOR FUTURE USE. PROVIDE ALL REQUIRED PLATES TO ACCOMODATE OUTLETS AND DEVICES ACCORDINGLY, FINISH SELECTED BY OWNER AND/OR ARCHITECT. FOR EXAMPLE - HUBBELL SYSTEM ONE RECESSED 4 GANG FLOOR BOX CAT. CFB4G30 C/W 410GCCVRBK COVER PLATE AND FPMPREC AND FBMP6KS PLATES AS REQUIRED.
FB2	FLOOR MOUNTED STAMPED STEEL CONSTRUCTION WITH STANDARD KNOCK OUTS C/W RECTANGULAR COVER. INCLUDE FOR TWO (2) DUPLEX RECEPTACLES AND TWO (2) LOW VOLTAGE KEYSTONE JACKS CAPABLE OF ACCEPTING JACKS AS INDICATED. PROVIDE ALL REQUIRED PLATES TO ACCOMODATE OUTLETS AND DEVICES ACCORDINGLY, FINISH SELECTED BY OWNER AND/OR ARCHITECT. FOR EXAMPLE - HUBBELL SYSTEM ONE RECESSED 6 GANG FLOOR BOX CAT. CFB6G30 C/W 610GCCCVRBK COVER PLATE AND FPMPREC AND FBMP6KS PLATES AS REQUIRED.
WB1	WALL MOUNTED A/V DISTRIBUTION RECESSED BOX MOUNTED BEHIND AL WALL MOUNTED TELEVISIONS. SYSTEM TO BE C/W SURGE PROTECTED POWER KIT, A/V CONNECTION PLATE AND COVER PLATE. INCLUDE ADDITIONAL 1" (25mm) EMPTY CONDUIT C/W PULL STRING TO ACCESSIBLE CEILING SPACE FOR FUTURE USE. CONFIRM MOUNTING HEIGHT WITH ARCHITECT AND/OR CLIENT PRIOR TO ROUGH-IN. ALL TO INCLUDE 1 POWER AND 2 DATA (UNO). FOR EXAMPLE - HUBBEL PREMISE WIRING CAT. NSAV62M C/W NSAV6C COVER, NSOKPS POWER KIT, NSJ6W DATA SNAP FIT, NSP16W PLATE TO SUITE.



ENLARGED EXISTING ELECTRICAL ROOM — 2 / E300 — 1 : 50



Level 2 Power and Systems Plan — 1 / E300 — 1 : 100

GENERAL NOTES:

A. CIRCUITING FROM NEW PANEL THAT REPLACES EXISTING PANEL RP.A-2RB IS SHOWN FOR ARRANGMENT ONLY. ACTUAL CIRCUIT NUMBERS SHALL BE DETERMINED ON SITE AS MADE AVAILABLE BY RENOVATIONS.

B. CONTRACTOR TO PROVIDE BREAKERS TO RECONNECT ANY EXISTING LOADS NOT AFFECTED BY RENOVATION AND OUTSIDE OF THE RENOVATION AREA.

C. PROVIDE ADDITIONAL BREAKERS IN EXISTING PANELBOARDS AS REQUIRED TO MAKE ALL SYSTEMS FULLY FUNCTIONAL.

D. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MAKEING GOOD THE EXISTING AND NEW ELECTRIC BASEBOARD HEATING.

E. IT IS ASSUMED BASED ON EXISTING DRAWINGS THAT ALL AREAS OUTSIDE OF SCOPE OF WORK AREA ARE CIRCUITED FROM PANEL RP.1-2RA LOCATED IN THE EXISTING ELECTRICAL ROOM. ANY DEVICES CONNECTED TO PANEL TO BE REPLACED ARE TO BE RECONNECTED AND MADE GOOD TO NEW PANEL, PROVIDE NEW BREAKERS AS NEEDED TO SUIT.

F. ALL NEW DATA CABLING FOR OFFICES, MEETING AREAS, COLLABORATION SPACES, ETC. IS TO BE PROVIDED FROM THE EXISTING COMMUNICATIONS/IT ROOM. ALL CABLING AND INSTALLATIONS TO MEET UNIVERSITY OF BROCK STANDARDS AND SPECIFICATIONS.

G. ALL EXISTING CONDUITS, FEEDERS, ETC. WITHIN THE SCOPE OF WORK AREA THAT SERVICE ALL OTHER SERVICES THAT ARE OUTSIDE OF SCOPE OF AREA ARE TO BE IDENTIFIED AND MAINTAINED THROUGH OUT THE CONSTRUCITON PROCESS. CONTRACTOR TO RELOCATE, REWORK AND OR EXTEND AS NEEDED TO MAINTAIN OPERATION DURING CONSTRUCTION AND REINSTATE AT CONSTRUCTION COMPLETION.

Drawing Notes

1 UTILIZE EXISTING BRANCH WIRING FROM EXISTING LOCAL PANEL SERVING ALL ELECTRIC HEATERS AND MAKE ALL FINAL CONNECTIONS TO NEW ELECTRIC HEATERS FROM PANEL HP.A-2HA.

2 PROVIDE NEW BREAKER IN EXISTING LOCAL PANEL "HP.A-2HA' AND ASSOCIATED BRANCH WIRING FROM BREAKER TO FORCE FLOW HEATER AT ENTRIES. COORDINATE CONTROLS WITH MECHANICAL AND INTEGRATE IN EXISTING CONTROLS SCHEWE.

3 PROVIDE BASKET STYLE CABLE TRAY SYSTEM FOR ALL COMMUNICATION AND LOW VOLTAGE WIRING (NO POWER OR LINE VOLTAGE). UTILIZE J HOOKS FOR ALL LATERAL RUNS OF LOW VOLTAGE (COMWUNICATION) WIRING FROM CABLE TRAY TO ADJACENT SPACES WHERE ACCESSIBLE CEILING IS PROVIDE. PROVIDE 1" CONDUITS C/W BELL END IN ALL EXPOSED APPLICATIONS FOR LATERAL RUNS. COORDINATE CABLE TRAY LOCATION WITH ALL MECHANICAL AND STRUCTURAL COMPONENTS. TERMINATE CABLE TRAY IN PUBLIC CORRIDOR AND PROVIDE THREE (3) 3" CONDUITS BETWEEN CABLE TRAY AND IT ROOM C/W PULL STRING AND BELL ENDS FOR EXTENSION OF CABLING BETWEEN IT ROOM AND CABLE TRAY. BASKET TRAY SYSTEM SHALL BE 2x4 MESH, MADE OF RECYCLED STEEL, T-WELDED CONSTRUCTION. INCLUDE FOR ALL SPLICE KITS, MOUNTING HARDWARE AND VERTICAL DOWN ACCESSORIES FOR CABLE PROTECTION. TRAY TO BE MINIMUM 2" DEEP AND 12" WIDE, FOR EXAMPLE HUBBELL CAT. No.: HBT02125, OR SIMILAR.

4 EXISTING CONDUITS SERVING ALL LOW VOLTAGE WIRING AND FIRE ALARM DEVICES ARE TO BE SUPPORTED THROUGH THE DEMOLITION PROCESS. ONCE ALL CEILINGS ARE REMOVED ALL CABLING WITHIN SCOPE OF WORK AREA IS TO BE IDENTIFIED AND REMOVED CAREFULLY WHERE EXISTING OFFICES ARE TO BE COMPLETELY REMOVED. ALL OTHER CABLING IS TO BE IDENTIFIED ACCORDINGLY AND BROCK STAFF IS TO BE NOTIFIED OF FINDINGS. EXTREME CARE IS TO BE TAKEN TO ENSURE ALL CABLING AND EXISTING CONDUITS REMAIN IN PLACE THROUGH THE CONSTRUCTION PROCESS WITH TEMPORARY SUPPORTS AS NEEDED DURING THE CONSTRUCTION. AT CONSTRUCTION END CONTRACTOR IS TO PROPERLY SUPPORT EXISTING CONDUITS BELOW DUCTWORK. PAINTING OF CONDUITS TO MATCH CEILING BY OTHERS AS OUTLINED ON ARCHITECTURAL DRAWINGS.

5 EXISTING KEYPAD FOR SECURE ACCESS TO EXISTING IT ROOM TO BE RELOCATED TO BE ADJACENT TO NEW PROPOSED DOOR ACCESS FROM VESTIBULE. ENSURE TO INCLUDE FOR DOOR CONTACTS AND CARD READER FOR ACCESS TO ROOM TO MAINTAIN SECURE.

6 RELOCATE AND REINSTATE WIRELESS SECURITY RECEIVER REMOVED DURING RENOVATION AND MAKE ALL FINAL CONNECTIONS AS NEEDED TO RETURN SYSTEM TO PRE-CONSTRUCTION STATE OF OPERATION.

7 PROVIDE ROUGH-IN AND ALL REQUIRED COMPONENTS FOR INDIVIDUAL OFFICE PERSONAL PANIC/SECURITY BUTTON TO CALL FOR ASSISTANCE.

8 ROUGH-IN FOR WALL MOUNTED IP CLOCKS TO BE 305mm BELOW CEILING. FINAL PLACEMENT AND LOCATION TO BE COORDINATED WITH PROJECT MANAGER.

9 ALL EXISTING SURFACE MOUNTED CONDUITS SERVING IT IT WIRING IN EXISTING AREA TO REMAIN AS PRESENTLY INSTALLED. REWORK AS REQUIRED WITHIN RENOVATION AREA AND RE-INSTATE ALL CABLING AND CONNECTIONS TO ENSURE ALL SYSTEMS REMAIN FULLY OPERATIONAL.

10 PROVIDE CEILING MOUNTED DEVICES FOR TV MOUNTED FROM BULKHEAD.

11 PROVIDE THREE (3) - 3" EMPTY CONDUITS C/W BELL ENDS BETWEEN CABLE TRAY AND IT ROOM ABOVE OFFICE C/W PULL STRING FOR ALL COMMUNICATION WIRING INSTALLATIONS.

12 PROVIDE DOUBLE GANG DEEP BACKBOX C/W ALL CONDUITS AS SHOWN ON AV RISER FOR AUDIO VISUAL INPUTS.

13 PROVIDE SINGLE GANG DEEP BACKBOX C/W ALL CONDUITS AS SHOWN ON AV RISER FOR AUDIO VISUAL INPUTS.

14 PROVIDE SINGLE GANG DEEP BACKBOX C/W ALL CONDUITS AS SHOWN ON AV RISER FOR TOUCH PANEL.

15 PROVIDE EMPTY 1" CONDUIT FROM IT ROOM TO EDGE OF AREA OF CONSTRUCTION FOR FUTURE WIRELESS ACCESS POINTS TO BE INSTALLED BY OWNER.

16 PROVIDE EMPTY CONDUIT C/W PULL STRING FOR CEILING MOUNTED SPEAKERS AS PER AV RISER.

17 REFER TO AV RISER FOR CONDUIT REQUIREMENTS BETWEEN PROJECTOR CEILING BOX AND AV RACK AND PROVIDE ACCORDINGLY.

18 WAP TO BE INSTALLED BY CLIENT IN FUTURE, PROVIDE ROUGH-IN ONLY TO BUILDING EXTERIOR TO ALLOW EXTENSION BY OWNER IN FUTURE.

19 PROVIDE NEW 1" CONDUIT C/W SMOOTH BEND RADIUS C/W 12-STRAND, SINGLE-MODE FIBRE BETWEEN COMMUNICATION ROOM A220 AND ROOM A203A PRIOR TO ANY REMOVAL OF SURFACE MOUNTED CONDUITS AS PART OF DEMOLITION OR ASSOCIATED WIRING.

20 EXTREME CARE IS TO BE TAKEN DURING ENTIRE CONSTRUCTION PROCESS TO ENSURE NO SYSTEMS OR COMPONENTS ARE IMPACTED TO ENSURE NETWORK REMAINS FULLY OPERATIONAL.

21 PROVIDE AND INSTALL 12-STRAND, SINGLE-MODE FIBRE INSTALLED IN CONDUIT WITH SMOOTH, LONG BEND RADIUS BETWEEN MCA220 AND GSB205.

22 FOR ALL WAP LOCATION PROVIDE A DOUBLE GANGED, DEEP BACK BOX C/W PLASTER RING AND APPROPRIATE SUPPORT AND CONDUIT SYSTEM TO ALLOW CABLING RUN FROM CABLE TRAY TO EACH LOCATION.

23 CONTRACTOR TO MAKE NOTE THAT THIS AREA MAY CONTAINED UNDERGROUND CONDUITS AND FEEDERS/WIRING. AREA TO BE X-RAYED AND SCANNED FOR ANY POSSIBLE OBSTRUCTIONS PRIOR TO ANY EXCAVATION WORK OR FLOOR SLAB CUTTING IS STARTED.

Brock University

PROJECT LOGO

TRUE NORTH | CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
6	ISSUED FOR ADDENDUM	2022.02.22
5	ISSUED FOR TENDER	2022.01.19
4	ISSUED FOR 90% REVIEW	2021.12.07
3	ISSUED FOR PERMIT	2021.11.23
2	ISSUED FOR 50% REVIEW	2021.10.01
1	ISSUED FOR COSTING	2021.07.22

REVISIONS:

Electrical Engineering
12 Argyle Street N.
Caledonia, ON N3W 1B6
www.sei-ee.com

SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

LEVEL 2 POWER & SYSTEMS PLAN

DRAWN BY: AS	DATE: 2021.07.20
CHECKED BY: JR	SCALE: As indicated

PROJECT NO.: 20-115

DRAWING NO.: **E300**

FILENAME: C:\Users\Dan\Documents\20-115 Brock MCA_E_21_Dan_Nicholls.rvt
PLOTTED: 2022/02/22 4:48:47 PM

D 610x914

Branch Panel: EX PANEL LP.A-2LA

Volts: 120/208 Wye
Phases: 3
Wires: 4
Mains Rating: 225 A

AIC Rating
Mains Type: Copper
Enclosure: Type 2

Supply From: EX PANEL DP.A-2LAA

Main Circuit Breaker... 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
LA-1	EXISTING LOAD	20 A	1	0 W	1138 W					1	15 A	LIGHTING	LA-2
LA-3	EXISTING LOAD	15 A	1			0 W	291 W			1	15 A	LIGHTING	LA-4
LA-5	LIGHTING	15 A	1					1253 W	0 W	1	15 A	EXISTING LOAD	LA-6
LA-7	LIGHTING	15 A	1	525 W	0 W					1	15 A	EXISTING LOAD	LA-8
LA-9	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	LA-10
LA-11	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	LA-12
LA-13	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	LA-14
LA-15	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	LA-16
LA-17	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	LIGHTING	LA-18
LA-19	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	LA-20
LA-21	SPACE	--	1			--	0 W			1	15 A	EXISTING LOAD	LA-22
LA-23	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	LA-24
LA-25	EXISTING LOAD	60 A	2	0 W	0 W					1	15 A	EXISTING LOAD	LA-26
LA-27						0 W	0 W			1	15 A	EXISTING LOAD	LA-28
LA-29	EXISTING LOAD	15 A	1					0 W	--	1	--	SPACE	LA-30
LA-31	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	LA-32
LA-33	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	LA-34
LA-35	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	LA-36
LA-37	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	LA-38
LA-39	EXISTING LOAD	15 A	1			0 W	0 W			2	15 A	EXISTING LOAD	LA-40
LA-41	EXISTING LOAD	15 A	1					0 W	0 W				LA-42
LA-43	SPACE	--	1	--	0 W					2	15 A	EXISTING LOAD	LA-44
LA-45	SPACE	--	1			--	0 W						LA-46
LA-47	SPACE	--	1					--	0 W	2	15 A	EXISTING LOAD	LA-48
LA-49	SPACE	--	1	--	0 W								LA-50
LA-51	SPACE	--	1			--	0 W			1	15 A	EXISTING LOAD	LA-52
LA-53	SPACE	--	1					--	0 W	1	15 A	EXISTING LOAD	LA-54
LA-55	SPACE	--	1	--	--					1	--	SPACE	LA-56
LA-57	SPACE	--	1			--	--			1	--	SPACE	LA-58
LA-59	SPACE	--	1					--	--	1	--	SPACE	LA-60
			Total Load:	1644 W		291 W		1253 W		3189 W			
			Total Amps:	15 A		2 A		12 A					

Panel Location: EX ELEC RM 15
Mounting: Surface

Notes:

Branch Panel: EX PANEL EA.A-2EA

Volts: 120/208 Wye
Phases: 3
Wires: 4
Mains Rating: 225 A

AIC Rating
Mains Type: Copper
Enclosure: Type 2

Supply From:

Main Circuit Breaker... 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
EA-1	EXISTING LOAD (EXIT LIGHTS)	15 A	1	292 W	0 W					1	15 A	EXISTING LOAD	EA-2
EA-3	EXISTING LOAD (CORRIDOR EMERG. LTG.)	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	EA-4
EA-5	EXISTING LOAD (EXIT & EMERG LIGHT)	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	EA-6
EA-7	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	EA-8
EA-9	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	EA-10
EA-11	EXISTING LOAD (EXIT)	15 A	1					0 W	430 W	1	15 A	EMERGENCY LIGHTING	EA-12
EA-13				0 W	0 W					1	15 A	EXISTING LOAD	EA-14
EA-15	EXISTING LOAD	30 A	3			0 W	--			1	--	SPACE	EA-16
EA-17								0 W	--	1	--	SPACE	EA-18
EA-19	SPACE	--	1	--	--					1	--	SPACE	EA-20
			Total Load:	292 W		0 W		430 W		722 W			
			Total Amps:	3 A		0 A		4 A					

Panel Location: EX ELEC RM 15
Mounting: Surface

Notes:

Branch Panel: EX PANEL DP.A-2LAA

Volts: 120/208 Wye
Phases: 3
Wires: 4
Mains Rating: 400 A

AIC Rating
Mains Type: Copper
Enclosure: Type 2

Supply From:

Main Circuit Breaker... 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
2LAA-1				0 W									2LAA-2
2LAA-3	(REMOVE) PANEL RP.A-2RB	200 A	3			0 W							2LAA-4
2LAA-5								0 W					2LAA-6
2LAA-7				0 W									2LAA-8
2LAA-9	EX PANEL RP-A-2RA	200 A	3			0 W							2LAA...
2LAA...								0 W					2LAA...
2LAA...				1644 W									2LAA...
2LAA...	EX PANEL LP.A-2LA	200 A	3			291 W							2LAA...
2LAA...								1253 W					2LAA...
			Total Load:	1644 W		291 W		1253 W		3189 W			
			Total Amps:	15 A		2 A		12 A					

Panel Location: EX ELEC RM 15
Mounting: Surface

Notes:

Branch Panel: RP.A-2RB

Volts: 120/208 Wye
Phases: 3
Wires: 4
Mains Rating: 225 A

AIC Rating 10,000
Mains Type: Copper
Enclosure: Type 2

Supply From:

Main Circuit Breaker... 200 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
RB-1	HOUSEKEEPING RECEPTACLES	15 A	1	500 W	600 W					1	15 A	COLLAB SPACE TV's	RB-2
RB-3	OFFICE RECEPTACLES	15 A	1			1200 W	1200 W			1	15 A	COLLAB SPACE RECEPTACLES	RB-4
RB-5	OFFICE RECEPTACLES	15 A	1					1200 W	400 W	1	15 A	OFFICE RECEPTACLES	RB-6
RB-7	COUNTER RECEPTACLES	20 A	1	200 W	1000 W					1	15 A	DOOR OPERATORS	RB-8
RB-9	COUNTER RECEPTACLES	20 A	1			200 W	800 W			1	15 A	COLLAB SPACE RECEPTACLES	RB-10
RB-11	U/C FRIDGE	15 A	1					200 W	1000 W	1	15 A	DOOR OPERATORS	RB-12
RB-13	RECEPTION RECEPTACLES	15 A	1	1200 W	600 W					1	15 A	COLLAB SPACE TV's	RB-14
RB-15	OFFICE RECEPTACLES	15 A	1			1400 W	1200 W			1	15 A	COLLAB SPACE RECEPTACLES	RB-16
RB-17	COPIER AND MFC OUTLET	15 A	1					200 W	0 W	2	15 A	EXISTING LOAD (HOT WATER HEATER)	RB-18
RB-19	OFFICE RECEPTACLES	15 A	1	800 W	0 W								RB-20
RB-21	OFFICE RECEPTACLES	15 A	1			800 W	0 W			1	15 A	EXISTING LOAD	RB-22
RB-23	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RB-24
RB-25	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RB-26
RB-27	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RB-28
RB-29	EXISTING LOAD	15 A	1					0 W	0 W	2	15 A	EXISTING LOAD (CONDENSER)	RB-30
RB-31	EXISTING LOAD	15 A	1	0 W	0 W								RB-32
RB-33	EXISTING LOAD	15 A	1			0 W	0 W			2	50 A	EXISTING LOAD (A/C)	RB-34
RB-35	EXISTING LOAD	15 A	1					0 W	0 W				RB-36
RB-37	EXISTING LOAD (MCS - CEILING)	30 A	2	0 W	0 W					2	30 A	EXISTING LOAD (MCA - CEILING)	RB-38
RB-39						0 W	0 W						RB-40
RB-41	MECHANICAL VAV POWER	15 A	1					0 W	0 W	1	15 A	MULITPURPOSE PROJECTOR SCREEN	RB-42
RB-43	DOOR CONTROL PANELS	15 A	1	0 W	0 W					1	15 A	MULITPURPOSE FLOOR BOX	RB-44
RB-45	DOOR OPERATORS	15 A	1			1000 W	0 W			1	15 A	MULITPURPOSE FLOOR BOX	RB-46
RB-47	WELCOME CENTRE COUNTER PLUGS	15 A	1					600 W	0 W	1	15 A	MULITPURPOSE FLOOR BOX	RB-48
RB-49	WELCOME CENTRE TV	15 A	1	200 W	200 W					1	15 A	AV RECEPTACLE	RB-50
RB-51	SPARE	15 A	1			0 W	0 W			1	15 A	SPARE	RB-52
RB-53	SPARE	15 A	1					0 W	0 W	1	15 A	SPARE	RB-54
RB-55	SPARE	15 A	1	0 W	0 W					1	15 A	SPARE	RB-56
RB-57	SPARE	15 A	1			0 W	0 W			1	15 A	SPARE	RB-58
RB-59	SPARE	15 A	1					0 W	0 W	1	15 A	SPARE	RB-60
RB-61													RB-62
RB-63													RB-64
RB-65													RB-66
RB-67													RB-68
RB-69													RB-70
RB-71													RB-72
			Total Load:	5300 W		7800 W		3600 W		16700 W			
			Total Amps:	46 A		67 A		30 A					

Panel Location: EX. COMM. / I.T. A217a
Mounting: Recessed

Notes:

Branch Panel: EX PANEL HP-A-2HA

Volts: 347/600 Wye
Phases: 3
Wires: 4
Mains Rating: 150 A

AIC Rating
Mains Type: Copper
Enclosure: Type 2

Supply From:

Main Circuit Breaker... 100 A

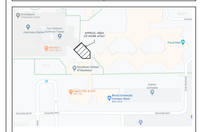
CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
HA-1	SPACE	--	1	--	--					1	--	SPACE	HA-2
HA-3	SPACE	--	1			--	--			1	--	SPACE	HA-4
HA-5	SPACE	--	1					--	--	1	--	SPACE	HA-6
HA-7	SPACE	--	1	--	--					1	--	SPACE	HA-8
HA-9	SPACE	--	1			--	1559 W						HA-10
HA-11	EXISTING LOAD (CONTROL TRANSFORMER)	15 A	2					0 W	1559 W	3	15 A	NEW VESTIBULE HEATERS (*)	HA-12
HA-13				0 W	1559 W								HA-14
HA-15	EXISTING ELEC. HEATING LOAD	15 A	2			0 W	0 W			2	15 A	EXISTING ELEC. HEATING LOAD	HA-16
HA-17								0 W	0 W				HA-18
HA-19	EXISTING ELEC. HEATING LOAD	15 A	2	0 W	0 W					2	15 A	EXISTING ELEC. HEATING LOAD	HA-20
HA-21						0 W	0 W						HA-22
HA-23	EXISTING ELEC. HEATING LOAD	15 A	2					0 W	0 W	2	15 A	EXISTING ELEC. HEATING LOAD	HA-24
HA-25				0 W	0 W								HA-26
HA-27	EXISTING ELEC. HEATING LOAD	15 A	2			0 W	0 W			2	15 A	EXISTING ELEC. HEATING LOAD	HA-28
HA-29								0 W	0 W				HA-30
			Total Load:	1559 W		1559 W		1559 W		4677 W			
			Total Amps:	4 A		4 A		4 A					

Panel Location: EX ELEC RM 15
Mounting: Surface

Notes:

Brock University

PROJECT LOGO



KEY PLAN

No.	DESCRIPTION	DATE
5	ISSUED FOR ADDENDUM	2022.02.22
4	ISSUED FOR TENDER	2022.01.19
3	ISSUED FOR 90% REVIEW	2021.12.07
2	ISSUED FOR PERMIT	2021.11.23
1	ISSUED FOR 50% REVIEW	2021.10.01

REVISIONS:

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12 Argyle Street N.
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CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

PANEL SCHEDULES

DRAWN BY: AS	DATE: 2021.07.20
CHECKED BY: JR	SCALE:

PROJECT NO.: 20-115

DRAWING NO.: **E500**

FILENAME: C:\Users\DanyBDocuments\20-115 Brock MCA_E_21_Daryl_Nichols.rvt
REVISED: 2022-02-22 4:49:44 PM

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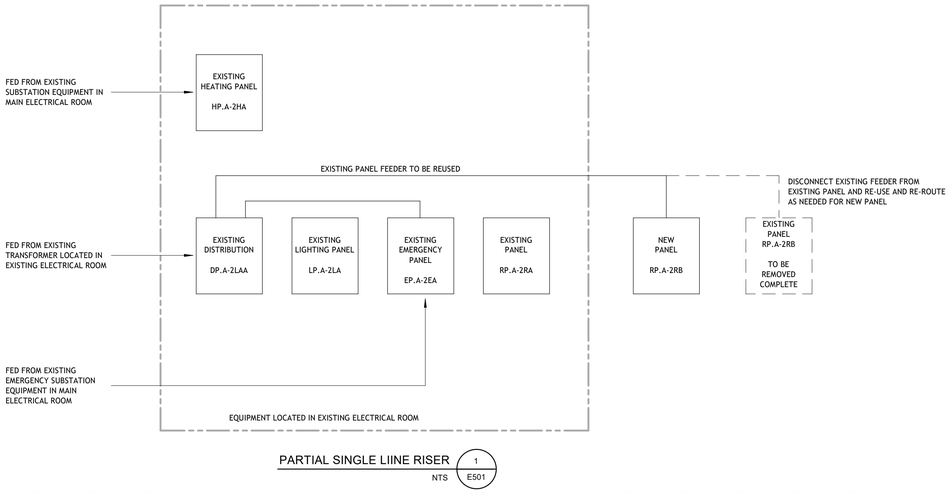


PARTIAL SINGLE LIINE RISER (1 / E501)
NTS

Branch Panel: (REMOVE) PANEL RP.A-2RB

Volts: 120/208 Wye
Phases: 3
Wires: 4
Mains Rating: 225 A

AIC Rating
Mains Type: Copper
Enclosure: Type 2

Supply From: EX PANEL DP.A-2LAA

Main Circuit Breaker... 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
RB-1	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD (ROOM RECEPTACLES)	RB-2
RB-3	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD (ROOM RECEPTACLES)	RB-4
RB-5	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD (ROOM RECEPTACLES)	RB-6
RB-7	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD (ROOM RECEPTACLES)	RB-8
RB-9	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD (ROOM RECEPTACLES)	RB-10
RB-11	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD (ROOM RECEPTACLES)	RB-12
RB-13	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD (ROOM RECEPTACLES)	RB-14
RB-15	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD (ROOM RECEPTACLES)	RB-16
RB-17	EXISTING LOAD (CORRIDOR RECEPTACLES)	15 A	1					0 W	0 W	2	15 A	EXISTING LOAD (HOT WATER HEATER)	RB-18
RB-19	EXISTING LOAD	15 A	1	0 W	0 W								RB-20
RB-21	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RB-22
RB-23	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RB-24
RB-25	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RB-26
RB-27	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RB-28
RB-29	EXISTING LOAD	15 A	1					0 W	0 W	2	15 A	EXISTING LOAD (CONDENSER)	RB-30
RB-31	EXISTING LOAD	15 A	1	0 W	0 W								RB-32
RB-33	EXISTING LOAD	15 A	1			0 W	0 W			2	50 A	EXISTING LOAD (A/C)	RB-34
RB-35	EXISTING LOAD	15 A	1					0 W	0 W				RB-36
RB-37	EXISTING LOAD (MCA - CEILING)	30 A	2	0 W	0 W					2	30 A	EXISTING LOAD (MCA - CEILING)	RB-38
RB-39						0 W	0 W						RB-40
RB-41	SPACE	--	1					--	--	1	--	SPACE	RB-42
		Total Load:		0 W		0 W		0 W		0 W			
		Total Amps:		0 A		0 A		0 A					

Panel Location: EX ELEC RM 15
Mounting: Surface

Notes:

Branch Panel: EX PANEL RP-A-2RA

Volts: None
Phases: Not Computed
Wires: Not Computed
Mains Rating: 225 A

AIC Rating
Mains Type: Copper
Enclosure: Type 2

Supply From: EX PANEL DP.A-2LAA

Main Circuit Breaker... 225 A

CKT	Circuit Description	Trip	Poles	A		B		C		Poles	Trip	Circuit Description	CKT
RA-1	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RA-2
RA-3	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RA-4
RA-5	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RA-6
RA-7	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RA-8
RA-9	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RA-10
RA-11	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RA-12
RA-13	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RA-14
RA-15	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RA-16
RA-17	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RA-18
RA-19	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RA-20
RA-21	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RA-22
RA-23	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RA-24
RA-25	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RA-26
RA-27	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RA-28
RA-29	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RA-30
RA-31	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RA-32
RA-33	EXISTING LOAD	15 A	1			0 W	0 W			1	15 A	EXISTING LOAD	RA-34
RA-35	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RA-36
RA-37	EXISTING LOAD	15 A	1	0 W	0 W					1	15 A	EXISTING LOAD	RA-38
RA-39	SPACE	15 A	1			0 W	--			1	--	SPACE	RA-40
RA-41	EXISTING LOAD	15 A	1					0 W	0 W	1	15 A	EXISTING LOAD	RA-42
		Total Load:		0 W		0 W		0 W		0 W			
		Total Amps:											

Panel Location: EX ELEC RM 15
Mounting: Surface

Notes:

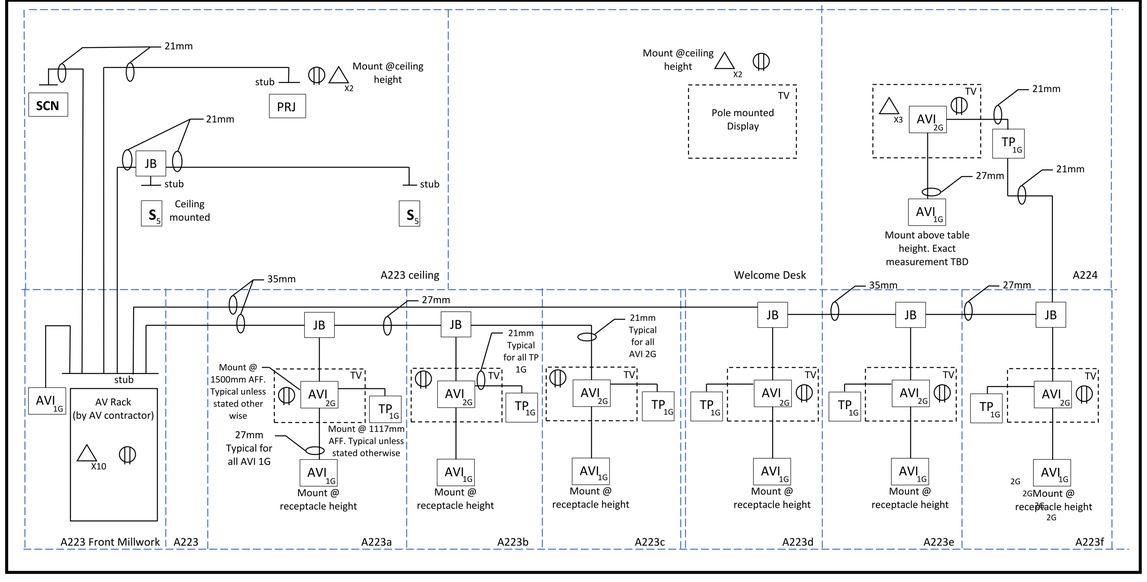
Legend

PRJ	Projector	X2	Campus LAN drop Qty 2
AVI 2G	Audio Visual input 2 Gang deep backbox	S 5	Surface mounted speaker Type 5
TP 1G	Touch Panel 1 Gang deep backbox	JB	Junction box
SCN	Motorized screen Ceiling mounted. 120V direct connection		Duplex receptacle 15A 120V

Brock U
MC-A- GSB: AV Conduit Riser

Note: All raceways to be supplied with pull strings

Project: 4529
Date: Jan 12 2022
Scale: NTS | **Drawn by:** MW
Cinema Stage Inc.



AV RISER (2 / E501)
NTS

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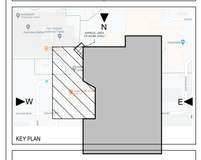
Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH



No.	DESCRIPTION	DATE
2	ISSUED FOR ADDENDUM	2022.02.22
1	ISSUED FOR TENDER	2022.01.19

REVISIONS:

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SEAL

CONSULTANTS:

PROJECT:
BROCK UNIVERSITY - MCA RENOVATION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:
PANEL SCHEDULES & SINGLE LINE DIAGRAM

DRAWN BY:	DATE:
AS	01/17/22
CHECKED BY:	SCALE:
JR	As indicated

PROJECT NO.: 20-115

DRAWING NO.: **E501**

FILENAME: C:\Users\DarylDocuments\20-115 Brock MCA E_21_Daryl_Nichols.rvt
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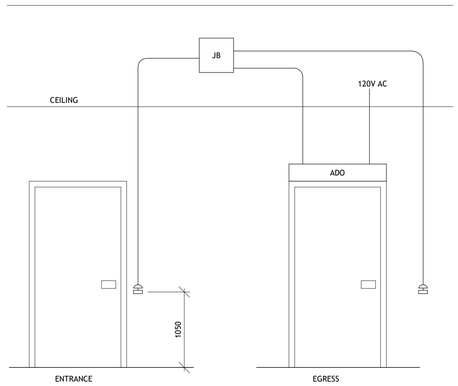


DETAIL NOTES:

A. THE JUNCTION BOX SHALL BE MOUNTED AT HIGH LEVEL ON THE INSIDE OF THE ROOM.

B. ALL CONDUITS SHALL BE A MINIMUM OF 3/4". PROVIDE PULL ROPES FOR LOW VOLTAGE WIRING BY OTHERS. CONDUITS ARE TO BE CONCEALED IN WALL. SURFACE DEVICES AND CONDUIT IS NOT PERMITTED.

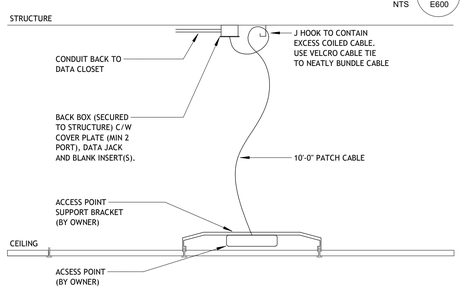
C. COORDINATE THE LOCATION OF ALL DEVICES PRIOR TO ROUGH-IN WITH DOOR HARDWARE SUPPLIER/INSTALLER.

D. COORDINATE WORK WITH HARDWARE SUPPLIER AND PROVIDE ANY MATERIALS NOT INCLUDED IN THEIR QUOTE TO FACILITATE A COMPLETE SYSTEM.

E. TEST AND ADJUST THE OPERATION OF THE DOOR TO THE OWNERS SATISFACTION. PROVIDE TRAINING AS REQUIRED TO OWNERS MAINTENANCE STAFF ON DOOR OPERATION, MAINTENANCE AND ADJUSTMENT.

DOOR DETAILS — 6 / E600

NTS



DETAIL NOTES:

A. THE CONTRACTOR SHALL PROVIDE ALL SUPPORTS AS REQUIRED TO SECURELY FASTEN BACK BOXES, CONDUIT, ACCESS POINTS, ETC. ACCESS POINTS MOUNTED TO T-BAR SHALL USE MANUFACTURE SUPPLIED BARS AND CLIPS TO SUPPORT ACCESS POINT. ACCESS POINTS MOUNTED ON DRYWALL SHALL BE SUPPORTED FROM THE CEILING ABOVE WITH UNISTRUT OR SIMILAR SYSTEM. ACCESS POINT SHALL NOT BE SECURED TO DRYWALL UNLESS WRITTEN APPROVAL FROM OWNER IS GIVEN.

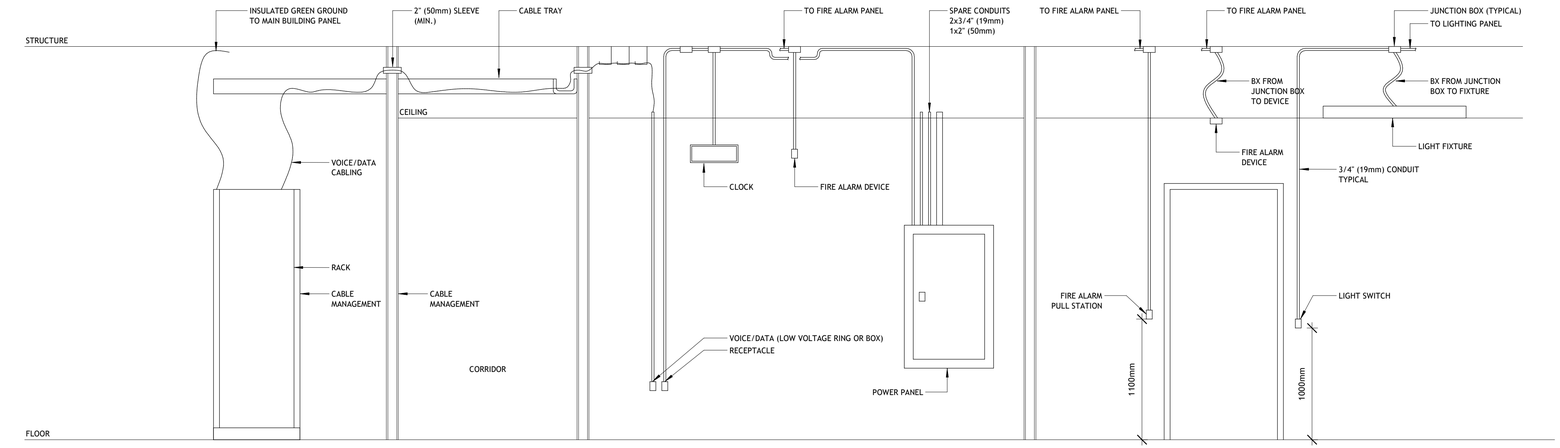
B. A PULL STRING SHALL BE LEFT IN THE CONDUIT TO ALLOW AN ADDITIONAL CABLE TO BE PULLED TO THIS POINT AT A LATER DATE.

C. CONTRACTOR IS TO COORDINATE THE LOCATION OF THE DATA JACK/BACK BOX WITH THE OWNER PRIOR TO ROUGH-IN. EXACT LOCATION TO BE DETERMINED ONCE THE WALLS ARE STUDDED.

D. DATA JACK IS TO BE LABELED WITH DATA PORT NUMBER. REFER TO SPECIFICATIONS FOR LABEL INFORMATION.

TYPICAL WIRELESS ACCESS POINT — 7 / E600

NTS



DETAIL NOTES:

A. DETAIL IS APPLICABLE FOR DEVICES SHOWN ON PLANS. ALL THE DEVICES INDICATED IN THE DETAIL MAY NOT OCCUR ON THE PLANS.

B. ALL CONDUITS SHALL HAVE BUSHINGS INSTALLED TO PREVENT CHAFFING OF WIRE(S).

C. ALL CONDUITS ARE TO GO DIRECTLY FROM THE OUTLET BOX UP THE WALL INTO THE CEILING SPACE. NO HORIZONTAL RUNS OF CONDUIT, OR GROUPING OF CONDUITS WITH OTHER SERVICES IN CLOSE PROXIMITY.

D. CONDUITS ARE TO HAVE PULL ROPES INSTALLED AND LEFT BEHIND TO ALLOW THE PULLING OF ADDITIONAL SERVICES IN THE FUTURE.

E. ALL BREACHES IN WALLS ARE TO BE FIRESTOPPED TO MAINTAIN THE FIRE SEPARATIONS.

F. PROVIDE SUPPORTS FOR ALL CEILING MOUNTED ELEMENTS (IE CHAIN HANGERS FOR FIXTURES ETC.) DEVICES SHALL NOT BE SUPPORTED BY A CEILING TILE.

TYPICAL MOUNTING HEIGHTS/INSTALLATION DETAIL — 1 / E600

N.T.S.

ONW MANUAL MODE

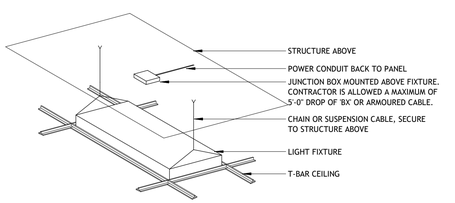
1. SWITCHES ARE REQUIRED TO TURN LOADS ON.
2. LOADS TURN OFF WHEN SENSOR TIMES OUT OR WITH SWITCHES.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, LOADS WILL NOT TURN ON.

ONW AUTOMATIC MODE

1. WHEN SENSOR ACTIVATED LOADS TURN ON.
2. SWITCHES CAN BE USED TO TURN LOADS ON OR OFF.
3. IF DAYLIGHT SENSOR IS ENABLED AND LIGHT LEVEL IS ABOVE SETPOINT, LOADS WILL NOT TURN ON.

Detail - LTG - Dual Tech Wall Switch Sensor — 2 / E600

N.T.S.



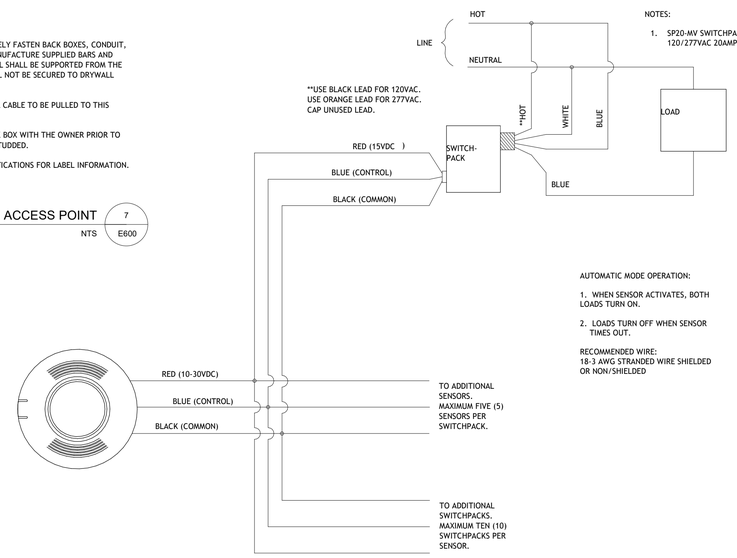
DETAIL NOTES:

A. BX OR ARMOURED CABLE IS TO BE RUN NEAT AND TIDY IN CEILING SPACE. PROVIDE CABLE TIES TO AFFIX TO SUSPENSION CHAINS. CLIP ENDS OF TIES.

B. JUNCTION BOXES ARE TO BE LOCATED CLOSE TO FIXTURES. PROVIDE P-TOUCH TYPE LABEL ON COVER PLATE WITH CIRCUIT NUMBER.

RECESSED FIXTURE IN T-BAR — 3 / E600

N.T.S.



NOTES:

1. SP20-MV SWITCHPACK SHOWN. 120/277VAC 20AMP RATING.

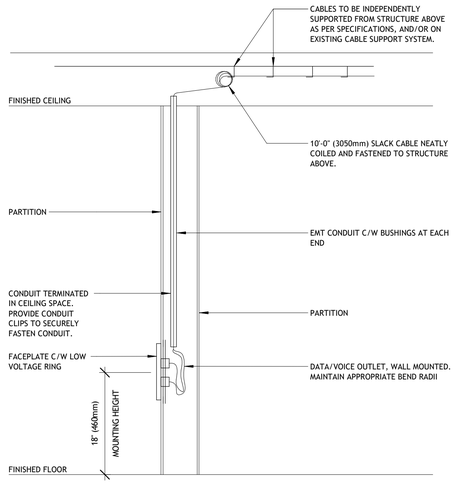
AUTOMATIC MODE OPERATION:

1. WHEN SENSOR ACTIVATES, BOTH LOADS TURN ON.
2. LOADS TURN OFF WHEN SENSOR TIMES OUT.

RECOMMENDED WIRE:
18-3 AWG STRANDED WIRE SHIELDED OR NON/SHIELDED

TYPICAL LIGHTING CONTROLS DETAIL — 5 / E600

NTS

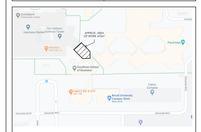


SECTION THROUGH VOICE/DATA OUTLET — 4 / E600

N.T.S.

Brock University

PROJECT LOGO



KEY PLAN

No.	DESCRIPTION	DATE
5	ISSUED FOR TENDER	2022.01.19
4	ISSUED FOR 90% REVIEW	2021.12.07
3	ISSUED FOR PERMIT	2021.11.23
2	ISSUED FOR 50% REVIEW	2021.10.01
1	ISSUED FOR COSTING	2021.07.22

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SEAL

CONSULTANTS:

PROJECT:

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GSB - MCA, Level 2 - Renovation
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L2S 3A1

DRAWING TITLE:

ELECTRICAL DETAILS

DRAWN BY:	AS	DATE:	2021.07.20
CHECKED BY:	JR	SCALE:	NTS

PROJECT NO.: 20-115

DRAWING NO.: **E600**

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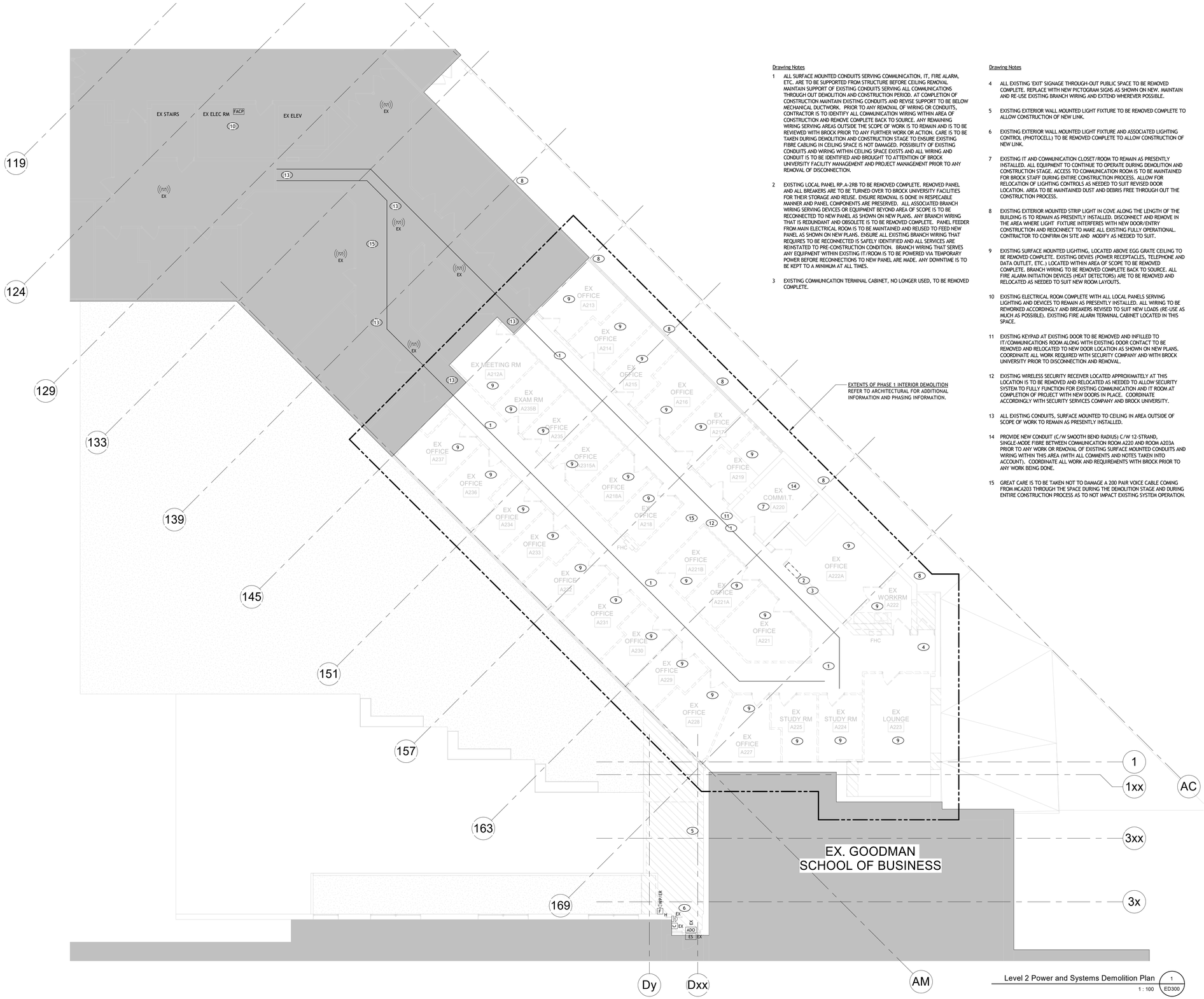

Level 2 Power and Systems Demolition Plan 1 : 100

Drawing Notes

1 ALL SURFACE MOUNTED CONDUITS SERVING COMMUNICATION, IT, FIRE ALARM, ETC. ARE TO BE SUPPORTED FROM STRUCTURE BEFORE CEILING REMOVAL MAINTAIN SUPPORT OF EXISTING CONDUITS SERVING ALL COMMUNICATIONS THROUGH OUT DEMOLITION AND CONSTRUCTION PERIOD. AT COMPLETION OF CONSTRUCTION MAINTAIN EXISTING CONDUITS AND REVISE SUPPORT TO BE BELOW MECHANICAL DUCTWORK. PRIOR TO ANY REMOVAL OF WIRING OR CONDUITS, CONTRACTOR IS TO IDENTIFY ALL COMMUNICATION WIRING WITHIN AREA OF CONSTRUCTION AND REMOVE COMPLETE BACK TO SOURCE. ANY REMAINING WIRING SERVING AREAS OUTSIDE THE SCOPE OF WORK IS TO REMAIN AND IS TO BE REVIEWED WITH BROCK PRIOR TO ANY FURTHER WORK OR ACTION. CARE IS TO BE TAKEN DURING DEMOLITION AND CONSTRUCTION STAGE TO ENSURE EXISTING FIBRE CABLING IN CEILING SPACE IS NOT DAMAGED. POSSIBILITY OF EXISTING CONDUITS AND WIRING WITHIN CEILING SPACE EXISTS AND ALL WIRING AND CONDUIT IS TO BE IDENTIFIED AND BROUGHT TO ATTENTION OF BROCK UNIVERSITY FACILITY MANAGEMENT AND PROJECT MANAGEMENT PRIOR TO ANY REMOVAL OF DISCONNECTION.

2 EXISTING LOCAL PANEL RP.A-2RB TO BE REMOVED COMPLETE. REMOVED PANEL AND ALL BREAKERS ARE TO BE TURNED OVER TO BROCK UNIVERSITY FACILITIES FOR THEIR STORAGE AND REUSE. ENSURE REMOVAL IS DONE IN RESPECABLE MANNER AND PANEL COMPONENTS ARE PRESERVED. ALL ASSOCIATED BRANCH WIRING SERVING DEVICES OR EQUIPMENT BEYOND AREA OF SCOPE IS TO BE RECONNECTED TO NEW PANEL AS SHOWN ON NEW PLANS. ANY BRANCH WIRING THAT IS REDUNDANT AND OBSOLETE IS TO BE REMOVED COMPLETE. PANEL FEEDER FROM MAIN ELECTRICAL ROOM IS TO BE MAINTAINED AND REUSED TO FEED NEW PANEL AS SHOWN ON NEW PLANS. ENSURE ALL EXISTING BRANCH WIRING THAT REQUIRES TO BE RECONNECTED IS SAFELY IDENTIFIED AND ALL SERVICES ARE REINSTATED TO PRE-CONSTRUCTION CONDITION. BRANCH WIRING THAT SERVES ANY EQUIPMENT WITHIN EXISTING IT/ROOM IS TO BE POWERED VIA TEMPORARY POWER BEFORE RECONNECTIONS TO NEW PANEL ARE MADE. ANY DOWNTIME IS TO BE KEPT TO A MINIMUM AT ALL TIMES.

3 EXISTING COMMUNICATION TERMINAL CABINET, NO LONGER USED, TO BE REMOVED COMPLETE.

Drawing Notes

4 ALL EXISTING 'EXIT' SIGNAGE THROUGH-OUT PUBLIC SPACE TO BE REMOVED COMPLETE. REPLACE WITH NEW PICTOGRAM SIGNS AS SHOWN ON NEW. MAINTAIN AND RE-USE EXISTING BRANCH WIRING AND EXTEND WHEREVER POSSIBLE.

5 EXISTING EXTERIOR WALL MOUNTED LIGHT FIXTURE TO BE REMOVED COMPLETE TO ALLOW CONSTRUCTION OF NEW LINK.

6 EXISTING EXTERIOR WALL MOUNTED LIGHT FIXTURE AND ASSOCIATED LIGHTING CONTROL (PHOTOCELL) TO BE REMOVED COMPLETE TO ALLOW CONSTRUCTION OF NEW LINK.

7 EXISTING IT AND COMMUNICATION CLOSET/ROOM TO REMAIN AS PRESENTLY INSTALLED. ALL EQUIPMENT TO CONTINUE TO OPERATE DURING DEMOLITION AND CONSTRUCTION STAGE. ACCESS TO COMMUNICATION ROOM IS TO BE MAINTAINED FOR BROCK STAFF DURING ENTIRE CONSTRUCTION PROCESS. ALLOW FOR RELOCATION OF LIGHTING CONTROLS AS NEEDED TO SUIT REVISED DOOR LOCATION. AREA TO BE MAINTAINED DUST AND DEBRIS FREE THROUGH OUT THE CONSTRUCTION PROCESS.

8 EXISTING EXTERIOR MOUNTED STRIP LIGHT IN COVE ALONG THE LENGTH OF THE BUILDING IS TO REMAIN AS PRESENTLY INSTALLED. DISCONNECT AND REMOVE IN THE AREA WHERE LIGHT FIXTURE INTERFERES WITH NEW DOOR/ENTRY CONSTRUCTION AND REOCNNECT TO MAKE ALL EXISTING FULLY OPERATIONAL. CONTRACTOR TO CONFIRM ON SITE AND MODIFY AS NEEDED TO SUIT.

9 EXISTING SURFACE MOUNTED LIGHTING, LOCATED ABOVE EGG GRATE CEILING TO BE REMOVED COMPLETE. EXISTING DEVIES (POWER RECEPTACLES, TELEPHONE AND DATA OUTLET, ETC.) LOCATED WITHIN AREA OF SCOPE TO BE REMOVED COMPLETE. BRANCH WIRING TO BE REMOVED COMPLETE BACK TO SOURCE. ALL FIRE ALARM INITIATION DEVICES (HEAT DETECTORS) ARE TO BE REMOVED AND RELOCATED AS NEEDED TO SUIT NEW ROOM LAYOUTS.

10 EXISTING ELECTRICAL ROOM COMPLETE WITH ALL LOCAL PANELS SERVING LIGHTING AND DEVICES TO REMAIN AS PRESENTLY INSTALLED. ALL WIRING TO BE REWORKED ACCORDINGLY AND BREAKERS REVISED TO SUIT NEW LOADS (RE-USE AS MUCH AS POSSIBLE). EXISTING FIRE ALARM TERMINAL CABINET LOCATED IN THIS SPACE.

11 EXISTING KEYPAD AT EXISTING DOOR TO BE REMOVED AND INFILLED TO IT/COMMUNICATIONS ROOM ALONG WITH EXISTING DOOR CONTACT TO BE REMOVED AND RELOCATED TO NEW DOOR LOCATION AS SHOWN ON NEW PLANS. COORDINATE ALL WORK REQUIRED WITH SECURITY COMPANY AND WITH BROCK UNIVERSITY PRIOR TO DISCONNECTION AND REMOVAL.

12 EXISTING WIRELESS SECURITY RECEIVER LOCATED APPROXIMATELY AT THIS LOCATION IS TO BE REMOVED AND RELOCATED AS NEEDED TO ALLOW SECURITY SYSTEM TO FULLY FUNCTION FOR EXISTING COMMUNICATION AND IT ROOM AT COMPLETION OF PROJECT WITH NEW DOORS IN PLACE. COORDINATE ACCORDINGLY WITH SECURITY SERVICES COMPANY AND BROCK UNIVERSITY.

13 ALL EXISTING CONDUITS, SURFACE MOUNTED TO CEILING IN AREA OUTSIDE OF SCOPE OF WORK TO REMAIN AS PRESENTLY INSTALLED.

14 PROVIDE NEW CONDUIT (C/W SMOOTH BEND RADIUS) C/W 12-STRAND, SINGLE-MODE FIBRE BETWEEN COMMUNICATION ROOM A220 AND ROOM A203A PRIOR TO ANY WORK OR REMOVAL OF EXISTING SURFACE MOUNTED CONDUITS AND WIRING WITHIN THIS AREA (WITH ALL COMMENTS AND NOTES TAKEN INTO ACCOUNT). COORDINATE ALL WORK AND REQUIREMENTS WITH BROCK PRIOR TO ANY WORK BEING DONE.

15 GREAT CARE IS TO BE TAKEN NOT TO DAMAGE A 200 PAIR VOICE CABLE COMING FROM MCA203 THROUGH THE SPACE DURING THE DEMOLITION STAGE AND DURING ENTIRE CONSTRUCTION PROCESS AS TO NOT IMPACT EXISTING SYSTEM OPERATION.

Brock University

PROJECT LOGO

TRUE NORTH

CONSTRUCTION NORTH

KEY PLAN

No.	DESCRIPTION	DATE
1	ISSUED FOR TENDER	2022.05.13

REVISIONS:

Electrical Engineering
12 Argyle Street N.
Cobourg, ON K9W 1B6
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SEAL

CONSULTANTS:

PROJECT:

BROCK UNIVERSITY - MCA
PHASE 1 - DEMOLITION

GSB - MCA, Level 2 - Renovation
1812 Sir Isaac Brock Way
St. Catharines, ON
L2S 3A1

DRAWING TITLE:

LEVEL 2 POWER & SYSTEMS DEMOLION PLAN

DRAWN BY: AS	DATE: 07/20/21
CHECKED BY: JR	SCALE: 1 : 100

PROJECT NO.: 20-115A

DRAWING NO.: **ED300**

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